TRANSCRIPT OF PROCEEDINGS

AUSTRALIAN ENERGY REGULATOR OFFICE

Before Ms Cristina Cifuentes, Presiding member, AER Board
Ms Paula Conboy, Chair, AER Board
Mr Jim Cox, Member, AER Board

Held at ACCC Hearing Room
Level 20, 175 Pitt Street
Sydney, New South Wales

On Thursday 15 March 2018

REVIEW OF RATE OF RETURN GUIDELINES
CONCURRENT EXPERT EVIDENCE SESSION 1

Mr Esmond Smith, Senior Financial Advisor, AER

Dr Jonathan Mirrlees-Black, Facilitator, Cambridge Economic Policy Associates
Assoc Prof Graham Partington, University of Sydney
Dr Martin Lally, Victoria University of Wellington
Prof. Stephen Gray, University of Queensland and Frontier Economics
Prof. David Johnstone, University of Wollongong and Sydney
Mr Greg Houston, Houston Kemp
Mr Ilan Sadeh, Hastings Funds Management

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1 **COMMENCED**
2
3 MS CIFUENTES: Good morning, thank you all for joining us. I'm Cristina
4 Cifuentes and I'm joined by my fellow board members, Paula Conboy who is
5 the Chair and Jim Cox. If you could both just introduce yourself for the
6 transcript.
7
8 MS CONBOY: Paula Conboy.
9
10 MR COX: Jim Cox.
11
12 MS CIFUENTES: So I'd like begin by acknowledging the Gadigal people, the
13 traditional custodians of the land where we are meeting today. I'd like to pay
14 our respects to them and their cultures and to acknowledge the elders, past,
15 present and future.
16
17 Thank you all for making the effort, particularly those that have come up from
18 Melbourne to get to Sydney. We really do value your participation in this
19 process. It will be a key input into the review of the rate return guideline. The
20 purpose of today's session is to assist the board members in making decisions
21 around a rate return that will best achieve the NEO and the NGO and we
22 expect that this session will help us do that by clarifying those areas where
23 there are agreement, if there is agreement between the experts or areas of
24 disagreement.
25
26 The session today provides the opportunity for you, the experts, to discuss your
27 ideas with each other and to clarify how your assumptions and your conclusions
28 differ. It will be an opportunity for the AER board to ask questions and seek
29 clarification of your positions and through this we'd like to explore the materiality
30 of the issues that have been raised, the implications of the issues, particularly
31 for various stakeholders, the businesses, consumers and investors. And
32 potential for resolution of some of these positions for those stakeholders.
33
34 We hope we can achieve this through a natural progressive dialogue and
35 productive dialogue. We don't want this session to be overly formal and we
36 appreciate that you've all committed to focussing on your positions rather than
37 advocating necessarily the positions of organisations which you may have
38 represented in the past. We appreciate your assistance in that.
39
40 It's important to note that this concurrent evidence session and the one that we
41 have scheduled later in April are only one piece really about overall consultation
42 processes and we will be continuing to have engagement with stakeholders in a
43 variety of ways. We will, following this concurrent session, continue to seek the
44 views of a broad range of stakeholders and to assist in this we will be actually
45 publishing a transcript of today's discussion and put that on our website. We
46 will invite submissions to be made on the two concurrent sessions and that will
47 assist the board in formulating it's views on the guideline.

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1 So as you know we have already published the three discussion papers and
2 that provides background and context for today's discussion. In those
3 discussion papers we've outlined our current approach to estimating the
4 allowed rate of return as well as some of the approaches from other regulators
5 and previous experts' submissions.
6
7 As part of this process and with each of the Tribunal and court decisions around
8 rate return we have been reflecting on how the current guideline has been
9 working. It was developed, as you know, in 2013. We consider it's been
10 rigorously tested, both through the provision of expert advice and through the
11 process of new determinations and tribunal and court decisions. In our view we
12 think that it's quite important that we continue to build on the body of work. But
13 in saying that I think we need to be very clear that we are not limited or
14 dismissing any alternative ideas. We, the board, are very open minded about
15 the evidence that is going to be presented to us. Rather our hope for this
16 process is that it will be a targeted approach to the review and that that does
17 allow for a more efficient process and allows for more effective and targeted
18 consultation.
19
20 So the concept of a targeted and incremental review may actually seem a bit
21 nebulous and we have experienced suggestions in a number of directions. But
22 overall I think there is general consensus that we will be taking an incremental
23 approach to this review and we want everyone to respect that. So this
24 concurrent session should help us in narrowing the areas, matters in dispute
25 and articulating the points of contention.
26
27 Turning very, very briefly to the COAG Energy Council draft legislation to make
28 the rate of return a binding instrument. That may raise a few topics of
29 discussion about the content that's required for a binding instrument and we will
30 be addressing some of those points in the presentation and obviously in our
31 broader consultation with stakeholders. What I do want to emphasise though is
32 that whilst some stakeholders may be wondering whether the binding nature of
33 it will change the framework within which we will consider this process, we don't
34 see that any change in that, the incremental nature of it will change itself.
35
36 So the overarching objectives of the rate of return as you know are set through
37 the NGO and NEO and the revenue and pricing principles and that's the case
38 for both the current and the proposed framework. So we're not anticipating any
39 change to the NEO or NGO or the RRPs. To the extent that our current
40 approach does satisfy those overarching objectives then the proposed
41 legislation shouldn't necessarily require any major change. It will require a
42 more formulated approach to the rate of return and we see this impacting on
43 most of the return on equity and we would propose to explore that further in a
44 different session.
45
46 So before we get started just a very quick run though through the structure and
47 agenda for today. I will be chairing the sessions but we have Jonathan

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1 Mirrlees-Black who will be the independent facilitator and you've all spoken and
2 met Jonathan. Jonathan's role will be to keep the discussion flowing and
3 balanced and focussed. He will not be advocating for any positions himself but
4 his questions will be around clarification or inviting alternative viewpoints. That
5 will allow the board to focus on the content of the discussion rather than on
6 necessarily running the meeting and Jonathan will be keeping you all to time
7 and to task.
8
9 The AER board members of course will be able to put questions directly to you
10 and as I said earlier the aim of this is to facilitate open forthright discussions
11 and for that reason we do have limited attendance and we will not be taking
12 questions from observers of the floor. So today's session has three topics. The
13 allowed rate of return, compensation for risk and use of data where judgment's
14 required. Then we will move onto gearing and finally the financial performance
15 measures. So Jonathan may actually structure the conversation a little bit
16 differently depending on the amount of interest there and that will evolve as the
17 discussion takes place.
18
19 So at the start of each session each of the experts will have an opening
20 statement and then at the start of each of those topics there will be a brief
21 introductory statement before it's opened up more generally. So now if I could
22 ask our experts to introduce themselves for the transcript.
23
24 ASSOC PROF PARTINGTON: Graham Partington from the University of
25 Sydney.
26
27 MR SADEH: Ilan Sadeh from Hastings Funds Management.
28
29 MR HOUSTON: Greg Houston from Houston Kemp.
30
31 PROF JOHNSTONE: David Johnstone, University of Wollongong and Sydney.
32
33 PROF GRAY: Stephen Gray from the University of Queensland and then
34 Frontier Economics.
35
36 DR MIRRLEES-BLACK: Jonathan Mirrlees-Black, Cambridge Economic Policy
37 Associates.
38
39 MS CIFUENTES: Thank you. So with that over to your Jonathan.
40
41 MR HOUSTON: Madam Chair, just may I raise a point of clarification? I
42 understood that Dr Lally was to be part of this session. Is that no longer the
43 position?
44 MS CIFUENTES: Yes, it is.
45
46 DR MIRRLEES-BLACK: So the AER have sponsored two experts and one of
47 those is Professor Graham Partington and Martin Lally is the other one. Martin

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1 will be participating on the session on gearing and Graham Partington will be
2 participating in the remaining sessions.
3
4 MR HOUSTON: Thank you.
5
6 DR MIRRLEES-BLACK: Okay. Thank you very much everybody and Cristina
7 for inviting me to do this role. I think it should be a very interesting day and I
8 think that what's important is that it's a new process. This is a context to the
9 way the rate return and the setting of a new guideline has been done in the way
10 that things have not been done before. But this new process I think allows us
11 to learn our thinking on this and should help resolve issues which have been
12 contentious and ..(not transcribable)..
13
14 So experts, new experts will challenge each other but the reason for challenge
15 is to help us understand, it's not for point scoring. We are seeking areas of
16 common ground and areas where there isn't common ground and I think we
17 can achieve that if we all act in spirit of what we intended to do which is work
18 within a great allegiance. The experts have all agreed to respect the guidelines
19 of the Federal Court for experts and that means acting in the interests of
20 achieving the NEO and the NGO and I think that's important.
21
22 My role, as Cristina's outlined, is as a facilitator, it's to manage the mechanics
23 of the session. It's to identify those areas of agreement and disagreement. It's
24 not my role to have a view, it's my role to facilitate your views to come out and
25 expose the areas of agreement and disagreement. So I will ask questions to
26 clarify. I may challenge and I may invite other experts to give a response. We
27 may get agreement with some issues here but as everyone's aware after this
28 session I will be working with the experts to produce a joint paper of the
29 positions which we can reach in terms of areas of agreement and disagreement
30 on the subject matter.
31
32 So the process is as Cristina has outlined, I will be asking everyone to make a
33 short opening statement, a maximum of two minutes and in order to help
34 facilitate it, to make sure it keeps time I'll raise a warning signal saying one
35 minute 30 when we're nearly there and when you're out of time we'll have a two
36 minute signal. So that's just to make sure that we do keep to time for the first
37 15 minutes. Then a session each of a range of topics which is set out in the
38 timetable you've all got. I won't read them through now but we're starting
39 through with some foundation issues, moving through to risk and gearing and
40 then a few extra issues on financial performance. As Cristina said I will ask one
41 of you to kick off each session with some remarks. That's just to provide a
42 starting point for discussion, it doesn't give priority to that expert's views and
43 after that in each session all of the experts will have an opportunity to give their
44 views during the course of that session and one of my roles is to make sure that
45 every expert does have an opportunity to express those views.
46
47 Before we move on to start just a word on approaching the task. In advising the

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1 AER we are helping them to be confident that their decisions are the best way
2 to satisfy the national interest in gas objectives. At the moment that means the
3 rate of return objective, or of course whatever may replace that. So I think it's
4 important that we think through have we put ourselves in their shoes in thinking
5 through how we move to apply the new guideline, develop a new guideline for
6 those objectives. I note there's a few issues to think through there. First of all,
7 why is it is in the interests of consumers for the rate of return guideline to be set
8 that relates to capital market returns. It's obvious to economists and financial
9 people I think but I think explaining how that links to what's in the long-term
10 interest of consumers is helpful.
11
12 Secondly, if we were the board what would really make us confident that the
13 rate of return guideline was going to deliver the right returns? Yes, it is in the
14 detailed estimation processes of the parameters of beta, gamma, theta and we
15 need to be very diligent in applying ourselves to the detailed estimation so we
16 need to make sure that we're using the best evidence for those. But I think it's
17 also important to reflect and take a step back and look to see if we can answer
18 and be confident that, in the words of economist John Maynard Keynes that the
19 result is roughly right and not precisely wrong. If we put ourselves in the shoes
20 of the board, that they need to be confident that the result really does represent
21 the opportunity cost of investment in the Australian Energy Network industry,
22 not more and not less.
23
24 Thirdly I think it's important to think through well what has changed since the
25 last guideline? So things have changed in the financial markets, things have
26 changed in the energy market and along with the board it's often helpful to think
27 through what's changed in the word and the environment in order to justify
28 making a change to the existing ..(not transcribable).. as we work through
29 today's agenda and the issues in the next agenda it's helpful to be mindful of
30 those objectives.
31
32 With that I will now move onto opening statements and I will put the order of
33 opening statements in the same as the order in which the experts are going to
34 reduce sessions later on today. So I will first of all call on Greg Houston from
35 Houston Kemp to make an opening statement of two minutes, thank you.
36
37 MR HOUSTON: Thanks. So the topic is the allowed return and in the
38 synthesised agenda that we've got there are four issues. Implications are the
39 draft legislation, will the guideline be evolutionary, should the foundation model
40 as applied in 2013 be continued or abandoned and the ..(not transcribable)..
41 find a circumstance in which the guideline might be reopened. I don't propose
42 to say much at all in relation to the draft legislation, I believe it's actually
43 probably more helpful to hear from the board on how it sees the implications
44 rather than providing my view.
45
46 I think on the question of whether this is an evolutionary process or whether
47 there are objective errors for this to be an evolutionary amendment to the

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guideline. That has been quite a fundamental question that will pervade everything that is - or many things that are said today and so that is something I hear the remarks to you that that is your - I don't know if it's a commitment but it was an indication and I think that has quite a lot of flow on applications for the next question which is whether or not this process is to examine the role and the status of the foundational model framework which really guides the review. I think if it is to be an evolutionary review then it would, I take from that or it'd make most sense to take that foundation model framework as given and continue and focus on how the application of that framework might need to be revised in light of evidence that's evolved and any other issues.

Finally the question of whether the guideline should be reopened, I'm sure we're going to come to that and I think whether or not this process even should or is able to define all those circumstances I think is an argument in question.

DR MIRRLEES-BLACK: Thanks very much, Greg. I'll now move onto Ilan Sadeh.

MR SADEH: Thanks. Firstly I appreciate the opportunity to participate and offer my thoughts on the way that the investment community thinks about these issues. It's a new thing for all of us and it's much appreciate to have this chance. Why should the framework care about investor confidence? Long term interests of consumers do require a viable capital market, particularly when you think since the last guidelines were done in 2013 there has been a huge increase in private investment across the networks. Millions of Australians are themselves investors in the networks through their super funds and through other vehicles. We estimate that there's at least $12 billion of Australian capital in the networks and on top of that there is substantial additional foreign investment and debt capital markets.

People talk a lot about change in risk will lead to a change in cost of finance and I think that's pretty clear. But one area that I always think about is the future of energy markets are going to evolve, in some ways we have identified but don't know how it's act and in other areas that we don't know. The best interest of consumers will always involve everybody looking to innovate where possible and having a vibrant stable foundation for the rate of return I think is critical to that.

An environment of confidence should mean both transparency and predictability, both in process and in outcome. From my perspective accurate and effective decisions are what we all should be striving for but we don't want to fall into a trap of looking for false precision. We shouldn't be looking for the intellectual theory of the day, therefore there should be significant benefit in making any changes because there is a real cost of continuing to change things.

DR MIRRLEES-BLACK: Thanks very much. Now I'll move onto Professor

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Graham Partington.

ASSOC PROF PARTINGTON: Okay. I'll try and be brief, although I have a life devoted to excess. I hope I will be forgiven if I state the obvious, but long experience has taught me that stating the obvious is often valuable.
Any regulator is invariably faced with opposing points of view in the submissions received, and that's to be expected. Even with the very best will in the world there's a natural inclination to take the case that favours self-interest has been the truth. So what you're going to hear from the regulated businesses is the return should be high. They will say the risk-free rate is too low, the equity meter is too low, the market risk is too low. You're using the wrong pricing model; you should be using one that gives a high rate of return. They'll also support the cost of debt being based on full-trading average.

On the other hand, consumers will argue for a lower rate on return. The beta's too high, the market risk premium's too high. They will argue the businesses shouldn't be allow to cherry pick, cherry pick the parameters and cherry pick the models to get higher returns, and they will point RAB multiples and say well you are, there is evidence of the regulators allowing excessive returns. In the current interest rate regime, consumer organisations are likely to oppose the cost of debt being based on a full trading average.

So you get one side trying to push for upward biased returns; the other side is trying to push for downward biased returns. So if you make a decision and everyone is unhappy, then that should be a source of comfort to the AER because it suggests you haven't erred too far in either direction.

However, the task is not to balance competing demands; it's to do the right thing according to the objectives and the rules. There's one thing that will achieve that and that's that you should have zero NPV investment ability because it's got two important properties. First, you cover all operating costs and relevant taxes, you repay the capital invested and you give the investors the return they require from the residual cash flow. Second, by definition, a zero NPV investment offers no economic rents. You're not exploiting market power. The incentive for investment is just right, encouraging neither too much investment or too little.

Ex ante, the investment will earn the return investors require at the time the investment is undertaken and the market value of the asset should equal the ..(not transcribable).. all that's achieved if you said the regulated return equal to the weighted average costs of capital based on the current cost of equity and the current cost of debt, which in turn reflects the risk of the underlying asset. Unfortunately, using a trailing average cost to debt will only result in these desirable outcomes by chance.

Now it seems to me these are fundamental issues and I wonder if we agree.

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1 DR MIRRLEES-BLACK: Thank you. David Johnstone.
2
3 PROF JOHNSTONE: I'll go back one step deeper than Graham. I was first
4 involved in this probably more than 20 years ago and I've watched from the
5 sidelines a lot and I've just been amused, basically, at how long the to-ing and
6 fro-ing has gone on, and we'd all stay the same. You know, it was the
7 perpetual cat and mouse game and it gives me the feeling of sophistry and
8 basically an industry of itself, and I think the regulators need to step back a bit
9 and just think from fundamentals what's going on. Now, fundamentally, these
10 entities have no independent existence. They can't be separated from the
11 regulator's decisions. So the regulator decides whether highly-profitable loss
12 makers, engineeringly efficient, whatever. So that makes the issue extremely
13 complicated and difficult. I can, therefore, see why a framework has been
14 invoked, the financial theory framework, but there's all sorts of questions over
15 that framework, both in its own theory and in the way that it's actually
16 shoehorned and abuse and misinterpreted for the convenience of whatever the
17 argument that we want. It's a so-called market for excuses.
18
19 I think hearings like this are wide open to this market for excuses where despite
20 all our testations about the independence of us as experts, it's a natural human
21 tendency to actually take aside and as a result we could end up with a
22 mismatch, and we probably have in the past, because Australia just doesn't
23 have the manufacturing base to argue for lower energy prices that, say, a
24 country like the US has, and governments owned a lot of these assets as well
25 and wanting to privatise them for big proceeds. So the incentive of government
26 was to actually inflate the revenue stream to the new owners.
27
28 There's so many conceptual questions I think are just completely washed aside
29 once we get involved in the minutiae of the whole thing. The CAPM framework
30 is supposed to be the be all and end all, but if that was the case, all these little
31 biddy things that come up and the documents are this thick, and they're
32 overwhelming, they would all be solved under the CAPM. The CAPM would be
33 a corollary. It just doesn't happen. Instead it ends up in ad hoc argument. One
34 expert argues on an inconsistent basis for the same thing in favour of one side
35 on different points. So that was the frustration that put me off the thing years
36 ago. It's not a very satisfying process, I must say, intellectually.
37
38 I think I've said enough. I will just give you some specifics. You take something
39 like the regulatory asset base. These assets, from the day they're bought
40 they're sunk. So the regulator could value them anywhere between nought and
41 infinity, anyone on the real line, and so where the regulator values them will
42 depend on the regulator's own decisions because the regulator watches the
43 market to see how the entities are performing, and the entities are performing in
44 the market according to the regulator's decision. So we've got this circularity
45 which is sort of like Lewis Carroll. You know, we've got that Alice in
46 Wonderland feel about it, which is very, very off putting to an outsider. I'm
47 merely an outsider now. It's disappointing because it's such an important thing

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1 and there doesn't seem to be any easy natural solution. I know we need a
2 framework and I know in that kind of circularity you end up with an equilibrium,
3 but the question is, is that equilibrium going to be one - am I finished?
4
5 DR MIRRLEES-BLACK: Yes, over.
6
7 PROF JOHNSTONE: I thought you were giving me two minutes. I was just
8 getting started.
9
10 DR MIRRLEES-BLACK: That's all right. Thank you very much. There's more
11 opportunity in the following discussion to expand on the points that you've
12 raised.
13
14 Stephen.
15
16 PROF GRAY: I think the centre point of the day should be the NEO and the
17 NGO. So one thing that we might all agree on, and I think Graham has said
18 that, is that if we set the allowed return equal to the return that investors
19 actually, no more, no less, then that would be in the long run in the interests of
20 consumers. So that creates the correct incentives for investment and,
21 importantly, the incentive for investment in innovation, which is going to be
22 really important over the course of this guideline.
23
24 I've written here that I thought we might be able to reach agreement on gearing
25 and the allowed return on debts. Maybe that was optimistic. If that's the case,
26 then, really, the focus of these sessions will be on estimating the allowed return
27 on equity and given that it's to be an incremental review, and we may obtain the
28 foundation model, where the Sharpe-Lintner CAPM is informed by evidence
29 from the Black CAPM and the dividend growth model, if we maintain that, then
30 the question is how does the AER best go about estimating the required return
31 on equity within that context.
32
33 So I think over the course of this session and the next one, it would be useful if
34 we bear in mind two principles. So one is that all risks should be addressed
35 somewhere in the regulatory framework. I don't think anyone would argue that
36 network investment has become and is becoming less risky since the last
37 guideline. So I think it's very important to ensure that risk is addressed
38 somewhere in the framework. So that might be in the equity beta, it might be in
39 insurance premium in Opex allowances, or it might be by setting the allowed
40 return so that after taking uninsurable risks into account, the expected return is
41 equal to the CAPM estimate, but I think the bottom line is that we should be
42 able to point to where each risk has been dealt with and identify what affect it's
43 had on the regulatory allowance.
44
45 Then the second principle, I think, relates to the use of market data. The
46 question is do we think that market data, on average, reflects the returns that
47 investors actually require. So if we do, we can use that data in our process of

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1 estimating those required returns and, if not, we're in big trouble. We have to
2 rely on the vibe or something of that nature. So the obvious example of that is
3 going to be in low beta bias where market data consistently shows that low beta
4 stocks earn higher returns than the CAPM suggests. I think we need to identify
5 whether we think that's because investors have priced assets to achieve a
6 higher return than the CAPM suggests, and that's what been achieved on
7 average, or whether we think that's because investors have just lucked out year
8 after year for 50 years in every developed market.
9
10 So I think if we bear those two principles in mind, then the best way to achieve
11 the NEO and NGO is to obtain the best possible estimate of that required return
12 on equity, which I think is the efficient financing costs of the benchmark efficient
13 entity, and I think bearing those two principles about consideration of risk and
14 how we're going to use market data will help to produce the best estimates.
15
16 DR MIRRLEES-BLACK: Thank you very much, Stephen.
17
18 Thank you, experts, for those opening remarks. We will now move on to the
19 first session, and the first session is going to be 45 minutes or so, and there
20 may need to be some flexibility in this, and depending on the debate, but our
21 plan is that 45 minutes we will be talking through from the foundation principles
22 and, perhaps, implications of the evolving legal framework and we will then
23 move on to useful judgments for 30 minutes after that.
24
25 So I ask Greg Houston to kick-off the discussion on this topic, please.
26
27 MR HOUSTON: I apologise. My previous opening remarks were in what I
28 thought was in relation to that first session, so I'm not sure I need to add much
29 more other than, perhaps, just to remind ourselves that there are four topics
30 under that first one. That's sort of set things off, really, in the implications of the
31 draft legislation that is sort of out there that will govern the future finding, rate of
32 return and whatever implications that might have for the development of the
33 guideline.
34
35 I think the most important thing about that legislation, it seems to me, is that the
36 guideline to comply with that legislation must have values or, if I can recall it
37 correctly, a way of calculating relevant values that is automatic and involves no
38 discretion on the part of the relevant regulator. I think if we're to turn our minds
39 to the implications of that, that seems to me the most important place to focus.
40
41 I think it would be likely, it seems to me, that the current guideline in its form
42 would, perhaps, not meet that standard and so the question arises as to how
43 things will need to change for it to do so. I know also that the legislation sort of
44 takes away the bench efficient entity and the rate of return objective. I'm not
45 sure that makes much difference to what we're actually talking about. That
46 would be an interesting question, perhaps, to discuss whether there are any
47 tangible implications of those quite specific objections and their removal.

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DR MIRRLEES-BLACK: Does anyone else want to come in on implications of legislation?

PROF GRAY: Well, just in terms of, like, how it could possibly work. I won't give a legal opinion of what the legislation means, but economically, I think it appears to me that the AER would have three options in relation to return on equity. So one option would be to fix market risk premium. So that is a fixed number for the duration of the guideline, and then that would be added to whatever the observable government bond yield at the time of each determination.

The second option would be to fix a total market return, so the approach that UK regulators are moving to and that would remain fixed for the duration, and then the third option would be something in between, which would have to be an approach that could operate mechanistically. So an example of that would be exactly halfway in between. So you would set a total market return at the time of the guideline and then that market return, every time the risk-free rate increased by 1%, that total market return would increase by half a per cent and vice versa. So that would be halfway between the two earlier extremes. I think they're probably the options that would be available to the AER under the draft legislation.

ASSOC PROF PARTINGTON: Well, my impression is it's going to be bad for consultants, and that's probably a good thing because we're likely to reduce the cost of regulation and get faster decisions. I agree it's better to have an incremental strategy than revolution, where we go back to square one, at least the rules of the current game, and it is a game, reasonably clear, and while gaming does go on, it's not generally gaming of the style to scrap everything and start again.

Obviously, stability in regulation stability in prices may be attractive to some investors, it may be attractive to consumers could reduce some sources of uncertainty, but it could also create other sources of uncertainty about, well, there could be changes coming down the track and there really won't be very much we can do about it because we're stuck with stuff that's been fixed.

Politicians, of course, will be attracted by anything that gets the electricity prices out of the news and we will stop having debates and stop having decisions and then that might reduce the news flow. I also think in this case they probably have got a genuine interest in reducing the costs of regulation and simplifying it.

PROF JOHNSTONE: I agree with Graham that we can't start again. Although, you know, if the regulatory decisions were bad enough, that's what happen. You know, there would be massive dysfunction and we would start again one way or the other, but incrementally, the danger is inertia, a kind of anchoring where the numbers like the current will have to become fixed in our head and we find it very hard to deviate too far off them, and logistically, the positions in

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1 the arguments become our anchors as well and so we get into a kind of a
2 group-think. That's why I'm constantly suggesting that we've got to think back
3 to fundamentals all the time about what the task is and, you know, think of the
4 assets themselves. The point that Graham Partington made is that it's easy to
5 get hung up on a securities market rather than think about the fundamentals of
6 the assets themselves. So when we're talking about risk, you know, in finance
7 textbooks, the risk of the cash flow is coming from the assets, not the risk of the
8 securities or the interpretation of things, so thinking back to fundamentals, just
9 how fundamentally risky are these cash flow streams coming from these
10 entities. That's the basic question that should be asked all the time.
11
12 MR SADEH: I just add from an investing mindset, if your goal is to have
13 something that effectively is as cost reflective as you can of capital that goes
14 into an asset that is not favouring it one way or another, capital decisions are
15 long term. They're not made on the basis of textbook theory, every five years
16 all of a sudden our capital structure will be totally refreshed. If there's
17 something that distorts it away from a market cost position and the way that you
18 make those decisions, that's an increased risk and you bet people starting to
19 make distortive decisions of their own, and that's in nobody's interest to try and
20 chase risk in capital structure to try and shoehorn back into the return that
21 you're given instead of the return trying to reflect what the most prudent form of
22 capital structure could be. So when you're talking about networks that are
23 multi-billion dollar facilities, they're not capital structures that are instantly reset
24 all the time. I mean, that's why to me the existing framework with trailing
25 averages, bits and pieces, makes a lot of sense because in practice there's no
26 way I could ever go and do all my hedge book on one day. It would cost you a
27 fortune. It would expose everyone to a lot of risk. It makes prices volatile. The
28 reality is all CFOs in these networks are continually and regularly refreshing
29 parts of their capital cycle and I think the existing framework does that.
30
31 Just on Greg's comment about the benchmark efficient entity concept, I also
32 see that as a really fundamental part together with the rate of return. I do see
33 them operating very similarly together because we currently have a system
34 that's based on an incentive framework and I think that's really important and
35 really good, particularly, as I said, as we're going into the longer term where
36 consumers' best interests are going to be served by, frankly, innovation rather
37 than buggering around on a few points here and there on return, which is
38 important, but the real benefit comes from everybody actually improving the
39 underlying service efficiency, not by playing games with finance.
40
41 The benchmark efficient entity to he is the bridge between what is in the
42 systematic risks in your rate of return and the non-systematic risks in the Opex
43 allowance that you're given. I think that works really well and I think there
44 would be a fundamental issue if that was broken.
45
46 DR MIRRLEES-BLACK: So just to clarify, which responds to those two points,
47 the draft guideline removes that particular objective, rate of return objective. Do

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1 the panel members think that the rate of return guideline should bring that back
2 in as an interpretation of the national electricity objective and the national gas
3 objective to make it clear from where the parameter estimation flows?
4
5 PROF JOHNSTONE: Sorry, bring what back in?
6
7 DR MIRRLEES-BLACK: The definition of the rate of return objective, which
8 includes the requirement that returns need to be commensurate with what
9 would be earned by a benchmark efficient entity? Do panel members agree
10 that that should be in the - or something like it should be in the new rate of
11 return guideline?
12
13 MR HOUSTON: Perhaps I could kick-off to that because I wouldn't want to be
14 seen to have left the impression that in my mind the benchmark efficient entity
15 did not matter. I think it's actually a very important concept, but I think - and so
16 my short answer to your question is, yes, ideally it would be encapsulated in the
17 guidelines if it's to disappear in the rules. I mean, quite how we've improved
18 our life by taking it out of one place and putting it in another, I'll leave others to
19 judge, but I think just to sort of square that with what I said before, I'm confident
20 that the benchmark efficient entity concept can readily be reconciled or derived
21 from the NGO and the NEO, and the process for that is relatively
22 straightforward in terms of the principles of good regulation, which is that I don't
23 think it's very helpful - well, first of all, regulation in the interest of consumers
24 should draw as much as possible on incentives for efficient conduct by
25 regulated service providers, and the way that you can - the only way, really, I
26 think, that you can achieve efficient conduct on the part of service providers
27 when it comes to financing is for the regulatory framework to look through the
28 financing, particular financing arrangements, that exists for any service provider
29 and to approach capital structure and financing decisions on a benchmark
30 basis.
31
32 Not to do that leaves a regulator in the position where it is starting to make
33 judgments about financing decisions and I think that's a very risky place for
34 regulators to be. It starts to ultimately lead to constraints on capital structure. It
35 imports the regulator with some responsibility for financing decisions, and in the
36 unlikely but not inconceivable event that a service provider was to make bad
37 financing decisions and was to reach a position of financial strife as a result of
38 that, then the regulator becomes part of the perceived problem that's developed
39 whereas staying out of that and approaching capital structure and financing on
40 a benchmark basis means the regulator can properly stand aside from those
41 kind of troubles.
42
43 So I think that's the set of principles from which the benchmark framework is
44 derived from the NGO or the NEO and I think they are really fairly clear why
45 they are accepted principles. So quite what the wisdom is of withdrawing that
46 from a legislative point of view is lost on me, but if it is to be withdrawn, I think it
47 would be helpful for the guidelines to make clear that the rate of return is to be

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1 approached on the basis of a benchmark entity.
2
3 PROF GRAY: Yes. I think this is maybe one area that we can agree on, so
4 that the AER, I think, has been on the record as saying they don't consider that
5 the rules were inconsistent with the NEO or NGO and, in fact, the whole
6 purpose of the AEMC making those rules, and the rule change in 2012, was to
7 put some flesh on or some guidance on how one would best go about providing
8 a decision that contributes towards the NEO and NGO. So I think it would be
9 very helpful to include some of that material in the guideline. You know, it's one
10 thing to say here is an allowed return and we think it's consistent with a NEO
11 and NGO. I think it's much more helpful to say here's a set of considerations
12 that we've made, and one of those, we're talking about the allowed return
13 objectives so that the rate of return objective, so, as I said before, I think all that
14 says is that what we should do is to strive to set the allowed return as close as
15 we can possibly get to the actual return that investors would require from the
16 market. To me that's what the ARORO says. That's what I said in my opening
17 statement. Graham, I think, calls that same concept NPV zero. I think we're all
18 in agreement that that's what the task is.
19 DR MIRRLEES-BLACK: Does everybody concur with that? Is that something
20 that we can agree on?
21
22 ASSOC PROF PARTINGTON: We are in agreement.
23
24 MR SADEH: I wouldn't call it NPV zero. I'd be very clear about not calling it
25 NPV zero because NPV zero applies that we don't take any risk.
26
27 ASSOC PROF PARTINGTON: Cap it off.
28
29 MR SADEH: It depends how you set the rate of return to start with, the
30 discount rate to start with.
31
32 ASSOC PROF PARTINGTON: Well, if you set the discount rate to the risk-free
33 rate, it means you don't take any risk but not otherwise.
34
35 MR SADEH: Yes, that's true. So it does more underline the importance of
36 getting the rate of return fair and right to start with to be reflective of the risks
37 that are being taken because it's certainly not the case that there are no
38 financing risks in multi-billion dollar packages.
39
40 MR HOUSTON: I think NPV zero might be an arithmetic consequence of what
41 we're talking about, but I think it can be quite distracting as an objective and if I
42 was to encapsulate what I think we're talking about, it is that the allowed return
43 should reflect the relevant risks as applied to the expected value of the cash
44 flows to which they are to be implied in order to derive a revenue requirement is
45 what the task is here.
46
47 PROF GRAY: That's exactly what I'm saying, and I think that's exactly--

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1 ASSOC PROF PARTINGTON: That's exactly what NPV zero is.
2
3 MR SADEH: It is.
4
5 PROF GRAY: But Graham's just calling it something else. I think we have
6 agreement on the concept.
7
8 MR HOUSTON: My point is that NPV zero is a sort of corollary of that principle,
9 but I think it's more helpful to articulate the principle in its long form. What is the
10 description of the expected cash flow is what we're talking about, which is on
11 expected value basis on the one hand and, secondly, the allowed return that's
12 consistent with the rest that are encapsulated in those expected values. If you
13 put those two things out there, then I think that is something that we, I would
14 hope, could all readily agree on.
15
16 MR SADEH: And the rules set that out, right.
17
18 MR HOUSTON: That's right.
19
20 MR SADEH: The allowed rate of return should be consistent with the
21 benchmark efficient costs, of the bench market efficient entity. That's the
22 concept.
23
24 MR HOUSTON: The one thing that isn't clearly in the rules, at least so far as I
25 can recall, is the reference to cash flows being formed on an expected value
26 basis. That's, perhaps, implicit.
27
28 ASSOC PROF PARTINGTON: I think it's implicit.
29
30 MR SADEH: Can I say, I mean, to me, because I do agree with the principle
31 and maybe it's the semantics of discussing it, which is part of a broader point
32 that I have that in the current environment of moving towards a binding rate of
33 return, you know, the removal of the effective limited merits review avenue and
34 that's just the case. You know. That's something that we'll have to deal with.
35 But, I think it does underscore the importance of putting as much objectivity as
36 possible and as much clarity for all the parties as possible, in the guidelines.
37 So, something about this that talks about you know, reflecting the risk, for
38 example, ex post versus ex ante is extremely important. Because, it's a very
39 different position to have investors take the risks around the capital structure
40 and then have the return calculated ex post. So, I hope that we're all talking in
41 similar points, but I think the clarification, you know, to kind of, be reported and
42 to you know, survive through time, I think, is important for everyone.
43
44 DR MIRRLEES-BLACK: We may be nearly at agreement on this particular
45 thing. But David, you haven't made a--
46
47 PROF JOHNSTONE: I think the finance aspects of this discussion represent

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1 the kind of riddles I was talking about, because you know, for example, Steve's
2 notion of what investors would require in the market - and that makes a lot of
3 sense if the revenue stream from these assets is actually determined by the
4 market, but when it's determined by the regulator, the regulator's wondering
5 what will be the market's reaction to its regulation, and we get into that
6 perpetual circle. And, that's where the confusion sets in and the room to go off
7 on tangents and so on.
8
9 Secondly, I think the regulators should be highly interested in the financing
10 decisions of the entities, because they reflect the motivations of the entities; the
11 motivations which are embedded in the regulation. So, for example, now just
12 simplistically, if the rate of return offered is too high and the entities therefore
13 gear up and borrow and build assets to pocket from that spread, a bit like a
14 bank, between the borrowing and lending rate, then the financing decisions are
15 actually giving the game away, in that sense. So, to actually try to deflect the
16 regulators' attention away from the financing decisions, I think, is going to take
17 ..(not transcribable).. ladder off something that's very important.
18
19 And lastly, on the Benchmark efficient entity, both Greg and Ilan actually said
20 things which I liked, and that was there was a kind of an engineering aspect to
21 that. Now, I think in the dominance of financial reasoning in politics and
22 regulation these days relative to engineering reasoning, we lose a lot of sight of
23 just basic things like engineeringly good decisions rather than profit good
24 decisions, profit making decisions.
25
26 So, these benchmark entities really, in the old days, would have been
27 determined from an engineering perspective, in terms of things like future
28 demand predictions, catering to technological change, all of those sorts of
29 things. So now, you can very quickly lose sight of those aspects which are
30 fundamental to the benefit of the economy and consumers and the suppliers
31 themselves, if you get hung up on finance, especially if that finance takes us
32 into these circles that I find so frustrating.
33
34 PROF GRAY: So, are you saying that the allowed return should be different
35 from the return that investors would require?
36
37 PROF JOHNSTONE: Investors don't know what they would require until they
38 know what the regulator's decisions are. So, for example, if a regulator grants a
39 tariff stream, the investors look at that tariff stream and they appraise it and
40 then they decide how much they'd pay for that. So, the regulator actually is
41 market, in a sense; the regulator is determining the tariff stream, very largely.
42
43 PROF GRAY: So, is that no?
44
45 PROF JOHNSTONE: Is it no?
46
47 PROF GRAY: Yes, to my question. Should they set the allowed return equal to

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1 the efficient cost of finance?
2
3 PROF JOHNSTONE: Okay. So, you were saying if the investors can see the
4 regulatory decisions--
5
6 PROF GRAY: Well, we're here to sort of, assist the AER. So, what do we think
7 the AER should do? I--
8
9 PROF JOHNSTONE: I just want to get your question clear. What are you
10 asking me?
11
12 PROF GRAY: So, should the allowed return be set equal to the efficient cost of
13 financing for the Benchmark efficient entity?
14
15 PROF JOHNSTONE: There's no such thing, because the efficient cost of
16 financing depends on the characteristics of the cash stream. And, the
17 characteristics of the cash stream are determined by the regulator.
18
19 PROF GRAY: So, what do you say the AER should be doing?
20
21 PROF JOHNSTONE: Okay. So, that's the big picture, right? Yes. And so,
22 what I'm saying - I guess we've already touched on this - and that is that there
23 is a framework in place that's got all these finance anchors, like the CAPM and
24 so on, and we've played around and with different nitty gritty aspects of that,
25 and possibly, it would appear that it's not ridiculously long, because there's no
26 revolt in society. On the other hand, there is some political annoyance at the
27 rises in energy prices. So, we get ourselves involved in this rigmarole to
28 produce a number which we might have been able to write down in five minutes
29 at the start of the day on intuitive grounds.
30
31 Now, whether that's of benefit or not, I'm not sure. I know it's an invitation to
32 lobbying. It opens up all sorts of opportunities for game playing and things that
33 Graham was talking about, and I can see that the regulators have got a pretty
34 difficult decision in trying to actually see where the sincere and genuine
35 positions are and see where the vested positions are.
36
37 DR MIRRLEES-BLACK: I think that there's a - it was a question about what
38 we're actually doing here, but it seems like there's almost concurrence around
39 the concept of the Benchmark efficient entity, perhaps with reservations from
40 David about precisely how you expect that. But, it sounds like in some of what
41 you were saying, the question is with reference to what, is the--
42
43 PROF JOHNSTONE: I would like to see more engineering content in this
44 notion of the Benchmark efficient entity, and that comes down to stuff like future
45 demand, engineeringly efficient reaction to future demand rather than
46 profiteering reaction to future demand.
47

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1 DR MIRRLEES-BLACK: Okay, thank you.
2
3 MR SADEH: Can I just ask - because I agree that all aspects of the business
4 needs should be done, and to me, as is said, a lot of the time, I personally don't
5 think that there should be too much - too much of a - of a spectrum of different
6 views around the rate of return guidelines. I think particularly all those
7 efficiency decisions are more things in you know, the Opex allowance and
8 things like that. How do you see the engineering decision actually factoring into
9 risks that are traditionally done in the rate of return? I think about things like
10 new technology, climate change.
11
12 PROF JOHNSTONE: I totally agree, and I think in the end - so, for example,
13 when the market actually evaluates these revenue streams, which are
14 regulated, then the market would actually be taking into account those things as
15 well and pricing those revenue streams. So, there's no doubt that you know,
16 the engineering comes first, but then the financial perception of the engineering
17 solution - whether it's a good one, whether it's going to end up with breakdowns
18 or excess capacity or sunk assets or stranded assets - that comes second. To
19 me, the engineering aspects need to come first, and they've been likely to
20 satisfy the financial aspects.
21
22 DR MIRRLEES-BLACK: I think we've covered some of these angles.
23
24 MS CIFUENTES: Just a quick question for clarification. Ilan, did I hear
25 correctly or - I may have misheard - that you were saying that new technology,
26 climate change and other factors such as that should be included in the rate of
27 return?
28
29 MR SADEH: I think it's an interesting question; like, you know, for some of
30 these, I don't think there's a totally clear cut answer. My view on it is the rate of
31 return should - you know, should fairly reflect systematic risk, which should
32 effectively be risks that broadly affect the industry and the broader market.
33
34 You know, the - in my view, the non-systematic risks that are in the Opex
35 allowance - and that's a little bit different to the way that investors look at their
36 rate of return, and I can come back to it, because that talks about the point that
37 somebody asked about why are investors returns looking higher than, you
38 know, a regulated WACC. It's because the non-systematic risks turn up in their
39 total return. Your rate of return is just on the capital you invest, not on the risk
40 you take in the - in the operating cash flows.
41
42 But, there are some elements - and let's take new technology - there are some
43 elements of new technology change that are affecting the markets as a whole.
44 And, I think that they should be reflected in the rate of return. There are really
45 specific elements to new technology that are outside that.
46
47 MS CIFUENTES: I think we're actually going to go back to that ..(not

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1 transcribable).. so--
2
3 DR MIRRLEES-BLACK: We have jumped ahead.
4
5 MS CIFUENTES: Yes. And, I just wanted to make sure I hadn't misheard.
6
7 MR HOUSTON: Well I think, just to be - perhaps square off some of the
8 perspectives here when we're coming back to this - is that Stephen said all risks
9 should be addressed somewhere and I agree with that. I think that perhaps
10 that's something we all agree on, and there is some question about whether
11 only systematic risks are being dealt with in the rate of return. That's okay,
12 providing all other relevant risks are addressed somewhere. So, A is okay if B
13 is present. And, I think that's probably the--
14
15 DR MIRRLEES-BLACK: I think that's probably fair, and I think we'll cover the
16 allocation of discussion of risk later in the session after morning tea.
17
18 ASSOC PROF PARTINGTON: Can I just make a comment about Benchmark
19 efficient entities; that was what we were discussing?
20
21 DR MIRRLEES-BLACK: Yes.
22
23 ASSOC PROF PARTINGTON: It's not clear to me what the efficient financing
24 structure is, or Benchmark efficient entity. And, in my view, the choice of
25 financing structure is best left to the entities themselves. The observation was
26 made here you can't rebalance every five years, and that's not what's assumed
27 in finance textbooks and it's not what's assumed by using the current cost of
28 debt. Some firms do make the choice to hedge; it's a choice. You don't have to
29 do it. And, some firms don't do it. Let's not get too side-tracked.
30
31 There seems to be general agreement the ratio is 64 to one. And, much to my
32 surprise, nobody's questioned that. I find that very surprising. It makes me
33 thing that somehow, that might be too generous. But--
34
35 DR MIRRLEES-BLACK: We'll come back to gearing later. I have a whole
36 session on it. So, just to move onto another issue which maybe we can have
37 some agreement on - and that's the foundation model--
38
39 MS CIFUENTES: Sorry, Jonathon. Before we do go on that, can we just ask
40 for some quick views? Graham made a couple of comments around some of
41 the benefits or otherwise or disadvantage of whether you actually have fixed
42 numbers or a methodology. Can we get a quick view from the experts on
43 whether the rate of return guidelines should actually have fixed numbers
44 or - and Stephen suggested a couple of options. But, just your view. And,
45 Graham, I think you said that there was an advantage in terms of price on
46 certainty but it also captures and sets it in stone for five years. So, can you just
47 tease that out a little bit more, please?

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PROF GRAY: You're looking at me? So, I'll--

MS CIFUENTES: No, we've got yours.

DR MIRRLEES-BLACK: Your view's happened already.

PROF GRAY: Not really. I think - just let me say one thing for - you can hold up the two minute sign if you want. So, I think an important sort of framework for discussing this issue is to talk about stability and predictability. And, I think there are two types of stability and predictability. So, one is the predictability and stability of process and one is the predictability and stability of outcomes.

So, if you - and go back to the three possibilities that I set out before. So, a process where you fix the market risk premium, and then at each determination, you add that fixed market risk premium to whatever the government bond yield happens to be of the day. That's a very predictable process. But, the outcome is highly unpredictable; the risk free rate lottery that has been discussed.

At the other extreme, if you were to fix the allowed return on equity for the whole period, that's a predictable and stable process as well as outcome, but there may be discrepancy that emerges between the allowed return and the cost - the prevailing market costs. So, I think it's important to think about those two types of stability and predictability, and maybe sort of, hear the investor viewpoint about whether - which of those is most important or are both important to investors.

MR SADEH: Look, as an investment side, both predictability and a - and a fair outcome are obviously important so there's no point in having a predictably, you know, ridiculous number come out. The way that I objectively think about it is when I look at the risks that are being assumed on the capital structure versus the cost of the capital structure, they are two different time parameters.

Investment decisions are very long term. Capital structures should largely be long term. They shouldn't be changing on the basis of you know, short term trailing average movements. There are also dangers in the way that gearing is set - you know, happens in data in the market. You know, if it's hard to find - most of the data should really be unlisted investors, cause that's where the majority of investment happens. But, listed markets, obviously share prices cause volatility and what would look like a gearing ratio, where the fundamental capital structure has no reason to change, but share markets make it look like it's changing.

So, I'm in favour of the longer term decision being gearing being a fixed number. Now, obviously you could look at that, you know, at each regulatory cycle, if there was a major change in the data, cause I wouldn't say just because it changed in the last five years, you should - you should change it again. The cost of the finance is a different thing because that is something

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1 that is regularly refreshed and is a function of market that isn't distorted by, you
2 know, stock markets on - you know, on cost of debt, for example.
3
4 DR MIRRLEES-BLACK: So, there will be some variables you'd say was
5 appropriate to fix and some variables where--
6
7 MR SADEH: And, that's gearing.
8
9 DR MIRRLEES-BLACK: --gearing fix and other variables parameters that you
10 would be comfortable with a formula?
11
12 MR SADEH: Yes, and quite frankly, I think the current methodology, there are
13 some points around, you know, the averaging period on, you know, cost of
14 equity, et cetera. But largely, the current formula works, makes sense and I
15 think - you can't say it most accurately reflects the way the ..(not transcribable)..
16 investor does things. You know, I mean, as we said here before, there are
17 different investment structures and different investment types. But as a whole, I
18 think it reflects the fact that that is a dynamic decision.
19
20 PROF JOHNSTONE: I think the question that Christina asked is a perfect
21 example of how the regulator actually determines the nature of these income
22 streams. Now, this choice between fixed numbers and a methodology is
23 actually a point of principle that will affect the nature of these cash flow streams.
24 And, it's a really simple example of how the regulator actually decides things.
25 Steve talked about the risk free rate lottery that exists in - if we don't have fixed
26 numbers even for the risk free rate, and that's true. And again, that's exactly
27 how the regulator affects the statistical characteristics of these cash flow
28 streams in making decisions on things like that.
29
30 Just as far as, you know, what I prefer, I mean, I would think fixed numbers
31 have got obvious benefits for simplicity, certainty, things like Steve mentioned,
32 versus methodology. Well, it just depends on the methodology. And, the
33 methodology actually - well that's really one of the reasons why we're here
34 today, I suppose.
35
36 DR MIRRLEES-BLACK: Graham, do you want to--
37 MR HOUSTON: I think this is a very difficult area and it's - as Stephen said,
38 and I have already agreed there's quite a wide range of choices there. I mean,
39 you could even fix an equity return in value terms and link that, if you wanted, to
40 some measure of inflation expectations, if you want to have that varying by sort
41 of, macro-economic circumstances.
42
43 So, you have - you know, the problem in this area is that we're being asked to
44 fix market variables when markets vary and you know, frankly, it's not really for
45 this forum, but I think the proposed amendments are very unwise and if you - I
46 was in the room in 2006 when the rules were developed to fix parameters
47 around the rate of return at that time, and the GFC within two years saw to folly

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1 of that, and I think there's some significant risk here that we may see history
2 repeating itself. Not that I predict a financial catechism but I think it's important
3 to be mindful of how the - where you end up could be - would stand up in that
4 context.
5
6 So, I think the answer to what should be fixed and what should not be - bearing
7 in mind what you may have to do - does need to be - there's some broad
8 choices, and those choices will then guide you as to what can be values and
9 what can be some kind of market based variable. But, you cannot forget that
10 markets change.
11
12 DR MIRRLEES-BLACK: Could you set out criteria for what the AER should fix
13 and what the AER should allow to vary; the criteria for the choice? That might
14 help the discussion or it might be that it's easier to--
15
16 PROF GRAY: We could go through it now. I could get you a list. I think the
17 risk free rate, that has to be a market rate, a variable; that's objectively
18 determined. I don't think there's any problem with that. The equity beta is
19 something that's going to change very slowly. The true systematic risk will
20 change very slowly over time, so that's something that can be fixed for the
21 guideline. The gearing would be something that will be fixed for the duration of
22 the guideline, for the same reason. That's unlikely to change materially over
23 time very quickly.
24
25 The allowed return on debt is bedded down, I think. You've got a process in
26 place for updating the trailing average allowance. I think that's all fine. And
27 then - so, that leaves the market risk premium. And, my personal view is that
28 it's somewhere between the two extremes. So, I don't think the market risk
29 premium is constant. I think that's a silly extreme at one end. And, I don't think
30 the total return on equity is a constant number, and I think that's silly at the
31 other extreme. I think it's somewhere in between.
32
33 So, you - the AER is then constrained under the draft legislation to try to work
34 between those two inconceivable end points to produce an approach that gives
35 an allowed return that's mechanistic. And so, the kind of example that I laid out
36 earlier is one way of going, sort of, halfway between those two sort of,
37 theoretical end points.
38
39 MR HOUSTON: And, I would agree with that assessment on the list.
40 DR MIRRLEES-BLACK: Any other views on that assessment?
41
42 MR SADEH: Look, I agree as well. I mean, equity is a longer term instrument
43 than debt generally. So, you know, as Stephen said, the risk parameters that
44 the market faces in equity can change from time to time, and you know, the
45 expected risk on that can change from time to time, but it's much more gradual
46 than - you know, than debt.
47

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1 I mean, if I look at the way that independent valuers have approached - a lot of
2 unlisted investors require to have independent valuations regularly; every six
3 months, every 12 months - not all but some - general approach from the - you
4 know, the independent valuers tends to follow a similar CAPM approach and
5 the market risk premium - while risk free rates have gone up and down like
6 yo-yos in the last ten years, the market risk premium very rarely changes
7 across asset classes.
8
9 DR MIRRLEES-BLACK: Graham?
10
11 ASSOC PROF PARTINGTON: Well, I think Stephen's comments are sensible.
12 I have two exceptions. One is yes, you know, one might fix the cost of debt but
13 currently, we're using the wrong process to get that cost of debt. So, I'm not in
14 favour of fixing the wrong number. What you want is the ex ante cost of debt;
15 ie, what required return on debt do investors want right now, not what did they
16 want back during the GFC or what did they want five years ago. So, that's the
17 first thing.
18
19 I agree that the market risk premium does change. It's just extremely bloody
20 difficult to work out what the number is. It's very difficult to precisely estimate
21 the change. Your argument is it doesn't change very much. I think it's probably
22 fairly stable, but it does shift from time to time, I suspect, and particularly when
23 you have extreme volatility in markets or very low volatility in markets. The
24 problem is measuring the change. That's a ..(not transcribable).. problem, so I
25 can't offer you a solution.
26
27 MR COX: Jonathon, could I just ask a follow up question? Thinking ahead, this
28 guideline is going to last for a number of years into the future. One of the things
29 that could happen - I'm not going to say would happen; it could happen - is we
30 move from low interest rates to high interest rates. If we were to do the sort of
31 fixing that Stephen's talking about, how would we fare if there were to be a
32 large increase in interest rates? Would there be a problem ..(not
33 transcribable)..
34
35 PROF GRAY: Under my approach, that would roll through in a trailing average
36 calculation for the allowed return on debt, and that's something that's perfectly
37 implementable and hedgeable by businesses. And, that trailing average
38 allowance also smooths the price changes that would confront consumers. So,
39 that approach, I think, on the cost of debt, is fine if interest rates move in either
40 direction. It's symmetric.
41
42 In terms of the allowed return on equity, if broad interest increase - so
43 government bond yields go up - then under that sort of, 50/50 approach that I
44 described, the allowed return on equity would go up for 50 basis points for
45 every increase in that government bond yield. The other ways of doing it, if you
46 fixed the allowed return on equity as a fixed number and interest rates
47 increased or decreased, then that would not change at all. And so, you do

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1 have the problem that you could get some dislocation between the allowed
2 return and market realities.
3
4 And then, if you fix the market risk premium, then of course, every change in
5 government bond yields will flow through one to one into the allowed return on
6 equity, so that creates more volatility in prices and allowed returns.
7
8 MR SADEH: I'll just comment there. In say, the debt component, there are
9 costs of debt that reflect things going back ten years quite easily. I mean, some
10 of the networks are quite new but I know for some of the ones that I'm a part of,
11 they'll have debt in 17 years that has a fixed rate margin. So, I think the trailing
12 average - it's good that it also provides stability in price path, but I think it also
13 does reflect, you know, the capital structure there.
14
15 ASSOC PROF PARTINGTON: The trailing average is like giving your builder a
16 costs plus contract except in this case, the interest rates is the plus. If you gave
17 a corporate treasurer anywhere out in the commercial world, the opportunity to
18 have a guarantee that his revenue stream would cover the cost of his historic
19 financing, he'd snatch out ..(not transcribable)..
20
21 MR HOUSTON: I don't think that's right, actually. I mean, it's - the issue with a
22 builder having a costs plus contract is that what the builder, him or herself, does
23 will flow into the cost. But trailing average does not in any way connect with the
24 end decisions of any individual treasurer.
25
26 ASSOC PROF PARTINGTON: It's a substantial incentive to try and be more
27 efficient ..(not transcribable)..--
28
29 MR HOUSTON: It's only set on a market benchmark.
30
31 ASSOC PROF PARTINGTON: I mean, you can pick a financing structure, but
32 it doesn't matter that much if it's not quite right as long as you just follow the
33 AER trailing average branch.
34
35 DR MIRRLEES-BLACK: I think there's specific issues in terms of the trailing
36 average and the debt. I think we need to allow time at some point within the
37 sessions to explicitly look at that as a later point, but I think there's only - there's
38 only one point for David to answer on in terms of the plan, which is do you have
39 comments in terms of the - what should be fixed and what should be varied in
40 terms of the parameters?
41
42 PROF JOHNSTONE: Are we back to that point?
43
44 DR MIRRLEES-BLACK: Yeah. Cause, I don't think you managed to interject
45 on that.
46
47 PROF JOHNSTONE: No. I've got no strong perspective on that, because I

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1 don't think there's any clear answer to that.
2
3 DR MIRRLEES-BLACK: Okay. Fine. Just one further thing before we move
4 on there - and it may be that this is a quick yes; it may not, but hopefully it is - I
5 think we're at general acceptance that this is an incremental review, that the
6 foundation model which was used in the 2013 guideline should be the basis for
7 the next guideline. Is there general acceptance of that particular statement or
8 not?
9
10 MR HOUSTON: Well, I think there's a foundation model framework. I think the
11 framework's quite important because the foundation model has - imports
12 considerations from other models and that - Stephen, I think, mentioned it
13 before - the black CAPM perspective in addressing the low beta bias and also
14 some consideration of the forward looking DGM model. So, I think in - I - no
15 doubt, we're going to come to, at some point, words on a page that we're trying
16 to agree to, but I think we just need to be mindful that when we talk about
17 financial foundation model, it's a framework that has a foundation model and it's
18 sensible; it's--
19
20 DR MIRRLEES-BLACK: And, the way it's been implemented in the guideline--
21
22 MR HOUSTON: Yes.
23
24 DR MIRRLEES-BLACK: --is that it's a framework and each model enters in
25 particular ways with decision points.
26
27 MR HOUSTON: Yes.
28
29 DR MIRRLEES-BLACK: I think that's fair to say, that it is a framework. Any
30 other comments on the framework, the generic framework?
31
32 PROF JOHNSTONE: I think we have to talk within some framework. You
33 know, communication requires the same language, but there is - there's a lot of
34 room for considerations that would arise under other frameworks to come into
35 this framework. So, in a way, it's just limiting our words that we're using, I think,
36 rather than limiting necessarily the perspectives that widely.
37
38 DR MIRRLEES-BLACK: Okay.
39
40 PROF JOHNSTONE: And, we have to do that.
41
42 ASSOC PROF PARTINGTON: Well, in that framework, we've got the dividend
43 growth model. Unfortunately, I think if we want to use a different growth model,
44 we need to consider the impact of alternative terminal value assumptions in
45 those dividend growth models, plural. For example, I can you know, go to the
46 web and find an estimate from the DGM from a commercial service that'll tell
47 me that the market risk premium is four and a quarter per cent. ..(not

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1 transcribable).. much of the regulated businesses that it's more than six; maybe
2 seven, seven and a half, also based on the DGM.
3 So, the problem with the DGM is it's very gameable, depending on what you
4 make your terminal value assumption.
5
6 DR MIRRLEES-BLACK: Okay, I think that's all.
7
8 PROF JOHNSTONE: Jonathan, there was points raised about market
9 estimates of Beta. That will come up later, obviously?
10
11 DR MIRRLEES-BLACK: Yes, in the statement section, I think we'll be talking
12 about it.
13
14 PROF GRAY: And the market risk premium?
15
16 DR MIRRLEES-BLACK: And the market risk premium will come in the return
17 on equity in session 2. So leave that for the time I think, yes.
18
19 PROF GRAY: Are there any other questions on ..(not transcribable)..
20
21 MS CIFUENTES: No, thank you - that was very helpful.
22
23 DR MIRRLEES-BLACK: Thank you very much. We'll be writing up all the
24 detail in the paper which will come out in future. I'll now move to the issue of
25 judgment, and if I may I'll ask Ilan Sadeh to give an initial few thoughts as to
26 what might be helpful to discuss.
27
28 MR SADEH: Thanks. One of the points I mentioned in my opening remarks
29 were I think there can be - you know, a false search for precision now when
30 we're looking to identify what is the most robust methodology. There is a cost
31 any time you change because you think there's an incremental difference in
32 thinking on reducing certainty and I think it's a really important point because it
33 flows directly into the use of judgment. Anything that's arbitrary, opaque, or
34 inconsistent - even if that's not the intention, it raises the risks associated with
35 investments and the concerns that I talked about earlier. Particularly in the
36 context of binding return guidelines which we support that that is going to
37 happen, but therefore the additional point that should come with it, is greater
38 objectivity, and greater clarity. Now, when you talk about extra room for a
39 judgment, that might itself kind of sound innoxious, but I can tell you what
40 words - what that strikes me as, as an investor because it's easy to say, "Well,
41 of course, why not?" And you know, "We should have, you know, judgments to
42 take into account circumstances that we don't know are going to happen." But
43 we need to balance dealing with low probability events versus leaving the door
44 open to change parameters that, quite frankly, shouldn't be changing readily.
45 You hear innoxious - let's have some judgment discretion; I hear - backdoor
46 discretion, and, as I said, even if that's not the intent of the parties, it
47 undermines confidence in the overall process, and that's something that we

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should be really wary of. At the same time I'm not so rigid that I think, you know, nothing should ever change, and there should never be any discretion - that's just unreasonable, but I think that discretion needs to be really tightly defined as to when it can be used; how should there be any checking or input into the use of it so the rules of the game aren't just effectively overridden when it suits.

PROF JOHNSTONE: And judgment should be explained when it is exercised?

MR SADEH: Absolutely. As I said, it is reasonable to expect that sometimes you need to consider other factors that normally wouldn't be part of a black and white process, but, as you said, both to ensure that decisions are accurate and robust, and also to provide confidence to all the stakeholders out there, including industry; including the consumer groups - challenge evidence - reasons and support should be given.

ASSOC PROF PARTINGTON: You can't escape judgment, right? You get conflicting submissions. If you've got your own opinions as the regulator. Judgment has to be exercised. However, I agree, it should be explained.

PROF JOHNSTONE: The other point too is - given it's such a hard job, you know, the regulator needs the discretion to just, in either direction - depending on how the regulation works, and that's clearly, obviously, going to be a matter of judgment. There's a simple judgment in whether the previous settings were correct, or not - the regulator has to make that re-judgment all the time.

PROF GRAY: Just in terms of that explanation of why judgment was exercised in a certain way - I think it's important for a regulator to explain why that particular exercise of judgment is more likely to lead to an estimate of the required return that is more consistent with benchmark efficient financing costs.

ASSOC PROF PARTINGTON: We were asked to comment on whether the assessment - are we dealing with the specific questions now, or are we still on judgment?

DR MIRRLEES-BLACK: We can look specific questions on - on judgment.

MS CIFUENTES: Can I just go back to Ilan's point about judgment? And I think he said that we need to balance low probability events with factors which don't change very often? So is that a point about using judgment to re-open, or - so is there a temporal element there? Because we obviously have to use judgment - for example, it fits in, or a methodology, or parameters. So were you addressing both of those issues?

MR SADEH: Yes. Because I think judgment can combine elements of identifying a methodology, or a data set, and then using that data set. And there are low probability events that, you know, in the current Opex allowances

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1 can be re-opened, as they're tightly defined, so, yes, I think it's important to
2 have something that you can take into account - low probability events,
3 because they have significant impacts on different stake holders. But to
4 then - you don't want to then allow for that through a catch-all. You know, it's
5 that comment about a sledge-hammer to crack a walnut. You know - if you're
6 trying to deal with an issue please tightly define it, so that discretion can be
7 understood that we need to take into account if there's GFC or if there's a
8 material dislocation, or if there is a natural disaster. You know - like the way
9 that uninsurable events are dealt with in the framework.
10
11 DR MIRRLEES-BLACK: Any other thoughts on this?
12
13 ASSOC PROF PARTINGTON: I'm not clear about whether we've moved on to
14 questions 1, 2, 3, 4?
15
16 DR MIRRLEES-BLACK: We're at question 2(A) - Use of judgment.
17
18 ASSOC PROF PARTINGTON: My point is that in the discussion documents
19 we had - there were about a dozen questions which then got condensed down
20 to a somewhat smaller set?
21
22 DR MIRRLEES-BLACK: Yes.
23
24 ASSOC PROF PARTINGTON: So I do have specific points in relation to some
25 of those discussions points.
26
27 DR MIRRLEES-BLACK: Why don't you--
28
29 ASSOC PROF PARTINGTON: Okay. So one of the questions we were asked,
30 is whether the section on criteria in the 2013 guidelines seemed to be
31 appropriate? The answer to that, from my perspective, is, yes, but. Item 6, for
32 example, is sufficient flexibility to allow for change in market conditions. Well,
33 under the legislative changes that's obviously going to be potentially difficult, so
34 that needs to sorted out. Another was based on criteria 4 - it was based on
35 quantitative modelling that's sufficiently robust, and not be unduly sensitive to
36 errors in input estimation. Highly desirable; extremely difficult. Because of
37 course it depends on the magnitude of the error and the input. And one might
38 think there that possibly one could also introduce a criteria less sensitive to the
39 risk of gaining. Some parameters are easier to gain than others. Some models
40 are easier to gain than others.
41
42 DR MIRRLEES-BLACK: Any other general points you want to raise where I
43 can bring in a specific question?
44
45 MR HOUSTON: Yes. I think there's some re-thinking needs to be done in
46 relation to the criteria 2(B) which is the purpose(?). Start point - it promotes
47 simple over complex approaches where appropriate. I think that seems to me

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1 like a call for simplicity without much guidance on when simplicity is
2 appropriate? There are, in many areas, quite complex issues, and I don't think
3 there's any respectable call for simplicity where that involves compromise to the
4 objectives, or the objectivity, of the data and the process. So I think I would
5 qualify the word "appropriate" or even just remove that criteria? Because I think
6 it allows you to go to places that probably the accountability for which is not
7 sufficient for an ideal process.
8
9 PROF JOHNSTONE: Are we on the judgment versus data?
10
11 MR HOUSTON: Yes.
12
13 PROF JOHNSTONE: I think the problem with the data is that there's so little
14 relevant data. There are so few listed entities, and so many issues in moving
15 things like market betas accurately, and then there are questions like, you
16 know, how much of the value of a market listed entity is actually it's regulated
17 component, and how much is from other activities. Because if we take the
18 betas as measured across the whole entity we're getting an average, and it may
19 well be that the beta of the regulated tariff stream - which in principle is very
20 detached from market conditions, it is actually being overstated. If we were to
21 break the entity down into separate income streams, or into separate assets,
22 and value them each individually - which then was the correct way to do it, then
23 they'd all have quite different betas and they'd all have to be estimated, or
24 judged, separately. So in capital budgeting context, for example, betas are
25 often judged because there's no listed entity in some new tech venture, or
26 example. So if you read the text books you actually made subjective statistical
27 judgments, and you work out a subject beta for a new investment. So relying
28 on market value, in this case, now, where we've got so little, and it's not
29 particularly related to regulated streams, as compared to whole entities, that
30 leaves you thinking you've really got to resort to judgment.
31
32 PROF GRAY: I think you've got data, and you've got the vibe. And I side with
33 data.
34
35 MR SADEH: I agree with that. I said, particularly - I'll just probably have to say
36 this a few times during the day - my concern about the rate of return becoming
37 binding means that to provide sufficient external confidence in the process - you
38 know - to have the temptation of saying, "I can subjectively make adjustments
39 to factors." That's warranted in some situations, but to be able to do it in others
40 it can lead to more harm than good. Data is always going to be imperfect. I'd
41 never suggest that we should absolutely rely on this data set because it
42 perfectly reflects things, and there are big limitations in listed data because
43 there isn't much of it. The time series might be short, but to me it's a better
44 position than having a subjective overrider to it.
45
46 DR MIRRLEES-BLACK: There are two questions which come out of this
47 discussion which we might be able to consider further. I think firstly I'd like to

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1 pick up on Greg's point which is the question is only fit for purpose 2(B). Simple
2 over-complex approach is where I progress. And he's suggesting that we
3 should remove that. Do others agree, or not?
4
5 ASSOC PROF PARTINGTON: No. There's a well established rule called
6 Occam's razor which is where faced with two competing explanations, prefer
7 the simple over the complex. That goes back hundreds of years - widely
8 adopted by the sciences. However - however, it is true that sometimes you
9 might need to divert from that because as Einstein said, "Everything should be
10 made as simple as possible, but not more so."
11
12 MR SADEH: I have to say it's something I'd rather ponder a bit longer - I can
13 see both sides to it.
14 PROF JOHNSTONE: I'll just come back to my former point, and that is, I think
15 you've got to look at the fundamental nature of these cash flow streams to
16 understand what their data would be in principle, rather than put total faith in
17 very limited data.
18
19 PROF GRAY: I'm not sure that criteria play a useful role - at all. So I think if
20 you had a set of criteria and then you could bring a piece of evidence in, and
21 weight that piece, objectively, anyone could bring a piece of evidence
22 in - weight it up against the criteria, and then decided whether it's in, or
23 out - then that would be a useful process. But I just don't think that's possible in
24 this kind of scenario. I think rather than have a kind of broadly worded criteria
25 that objectively you could not tell whether a piece of evidence satisfies that
26 criteria, or not. There's a big slab of judgment that's required. The much more
27 efficient approach would be for the AER just to set-out how it thinks it can best
28 go about the estimation task for each grey matter.
29
30 DR MIRRLEES-BLACK: And secondly, I think there's a question which raises
31 in the use of judgment - many have a preference of data over subjective
32 evidence, or quality - you might not say subjective, but more qualitative
33 evidence. I really think there's a question in terms of the data sets which are
34 being used, and the issue has already been raised here that the very low
35 number of listed comparative here means how reliable is the data from which
36 those judgments are made if one's just relying on Australian comparatives? I
37 think that's been raised by David, and others may have a view?
38
39 MR HOUSTON: Yes, I have a view on that - I think there's quite a good case
40 study for - definitely with the criteria in 2(B) which is that - you know - we're
41 down to three listed entities - we've got a fourth not delisted long ago. That's a
42 pretty limited set for some of the judgments that need to assist some of the
43 assessments that need to be made. In New Zealand where they have only two
44 listed entities - which is only one less than us, there was no debate in the
45 similar process for the comments submission. You have to look to overseas
46 evidence of beta, and I think it might have exported in Santiguar(?) - I can't
47 recall? There's no debate that you need to look at the evidence of overseas

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1 energy and stocks that were listed in order to inform the decision-making about
2 beta. Now, I think that is a good call, and that is - well, we can come to that
3 later, but I guess if I come to the simple versus complex, I would worry that the
4 criteria in 2(B) would lead to someone to say, "Well, it's much simpler to focus
5 on only three." It's more complex to go and worry about what's happening
6 overseas, and that where appropriate thing is a meaningless guide to making
7 that decision. So I don't have a problem with simplicity - if there's a simple way
8 of getting to the right answer, then I'm all for it. But I would rather defer to
9 Einstein in the sense that there's no having something simple if it's just not - it is
10 wrong, or not as good as something that's more complex.
11
12 MS CIFUENTES: So should the principle then be simple as complex is not
13 adding value?
14
15 MR HOUSTON: That's right. I think some reference to the ultimate objective,
16 and your ability to get there, would be fine.
17
18 MS CIFUENTES: Not simple because it makes the regulator's task easier?
19
20 MR HOUSTON: That's right.
21
22 MS CIFUENTES: But if the more complex process isn't actually adding value,
23 then you fallback to the proposition--
24
25 MR HOUSTON: Indeed, yes, so I would be comfortable if the "where
26 appropriate" was reworded somehow to reflect that gesture to what we're
27 actually trying to achieve here - which is the best market evidence of the
28 allowed rate of return.
29
30 MR SADEH: I mean, on the point about overseas peers as an example, I kind
31 of hesitantly support that in the sense that capital is global, and so it would be
32 wrong to think that investors only look at investing in Australian networks, and
33 not in others. But you do need to make sure that if you look at other investment
34 jurisdictions that you are comparing those that have similar regulatory
35 positions - and there are quite different positions around the world.
36
37 PROF JOHNSTONE: Yes, that's exactly right - and also that point about what
38 composition of the overall entity is the regulated part, and what's the
39 unregulated part? If it's more unregulated than regulated, then the data that
40 you measure is not applicable to the regulated part.
41
42 ASSOC PROF PARTINGTON: Yes.
43
44 MS CIFUENTES: Sorry - was that considered in New Zealand though - when
45 they extended that?
46
47 MR HOUSTON: There was. There was quite extensive consideration of the

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1 choice of that data set that was developed, and the weight that should be given
2 to various elements of it. So with regard to the extent to which they regulated,
3 and other things as well - and obviously the jurisdictions. I mean in New
4 Zealand they extended it out to Australia, the UK, and the USA, and I'm not
5 sure if Canada was involved? And I think there's obvious reasons for preferring
6 those sections, and it was a process of considering the appropriateness of the
7 set that was ultimately developed for that assessment.
8
9 MS CIFUENTES: And did that presumably, Greg, involve a degree of an
10 exercise of judgment by the regulator for the way in which we would
11 compensate the different regulatory frameworks - the proportion of regulated
12 versus unregulated revenue?
13
14 MR HOUSTON: Yes. So there was a process and criteria established and of
15 course they involve judgment, and there were many parties, or a number of
16 parties, who went through and reviewed, and made representations on the
17 weight, or what should be in, and what should be out, and so on. And I think it
18 was a good transparent process, and of course there's no one magic answer
19 comes from that, but I think it's a way of expanding the set of data that's
20 available. I think it is relevant. It may be less relevant than purely domestic
21 data, but it's not irrelevant. And though it's more complex it think it added
22 value.
23
24 DR MIRRLEES-BLACK: Yes.
25
26 ASSOC PROF PARTINGTON: I think it's clear that three comparators is a very
27 small sample set. The question of representativeness, statistically speaking,
28 you stand at errors more. However, you know, I can see the attraction of going
29 overseas, but the cure may be worse than the disease. Why is that? Well,
30 we've referred to some of the issues, and differences in technology, in
31 regulation, and taxation and other things, and what we haven't mentioned is it
32 raises the question of, "What's the appropriate market folio?" We just heard,
33 you heard - capital will flow. So why should we assume that the beta for an
34 American utility computed against some American stock index is the
35 appropriate market portfolio for application in Australia? So, you know, that's
36 an issue that would need to be addressed if you're going to go overseas.
37 Should we in fact be doing the whole thing against a global index? Or should
38 we combine the markets from which you are taking your comparators, and
39 compute betas with reference to that market? That's an open question.
40
41 MR SADEH: Can we talk - I mean I find it helpful sometimes to talk with some
42 like example about issues that might create problems; issues that might make it
43 easier to use - I mean, if you look in - I'm not saying we should compare
44 Australia with the Nordic region, but they'd have extremely different climate
45 conditions which impact their networks, and their relative risk quite
46 considerably. US jurisdiction - certain markets have different onus on the
47 regulatory cycle, and they are quite different. So I think there is some rationale

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1 in looking at overseas assets, but I think there should be quite a broad range of
2 input from a variety of people. I can take your point before about unregulated
3 assets. And yes, they do distort the overall beta, but not necessarily in a
4 upwards or a downwards way. As an investor, unregulated revenue in
5 transmission is very different to distribution. I would love to have as much
6 unregulated revenue in transmission as I could, because I see that as lower risk
7 then regulated return because it's effectively at 20 - 25 year lease - quite
8 different to other things. So you just do need to apply it much more than you
9 would in taking general Australian data.
10
11 PROF JOHNSTONE: I guess it's a really good example of the need to look at
12 individual cash flow streams piecemeal rather than overall averages. Because
13 those examples you gave show really drastically different statistical
14 characteristics of both cost and income streams, and to talk about risks you
15 need to get down to that kind of level - and again, that's an engineering level.
16 Because these are quite separate engineering activities, and they're rewarded
17 in different ways.
18
19 DR MIRRLEES-BLACK: I think we could say that there's general agreement for
20 broadening the data which is used, and the stream for doing that is a further
21 conversation.
22
23 PROF GRAY: Just on Graham's point about adopting approaches that are less
24 gameable - so the approach in New Zealand has been to adopt a very large set
25 of comparative businesses - so I can't remember if it was 40 of 60?
26
27 DR MIRRLEES-BLACK: 70?
28
29 PROF GRAY: 70? And so arguments about company A; company B, should
30 be in or out because they're more or less regulated or whatever, just aren't
31 made, because the overall mean is not sensitive to the inclusion, or exclusion.
32 If you have three comparators, and we're thinking about maybe we can find
33 another three that are very close comparators overseas, then of course you
34 have all the arguments about what should be in, and what should be out.
35
36 PROF JOHNSTONE: There would be no such thing as close comparators
37 necessary because of the different regulatory regimes and climatic conditions
38 and things across these countries, so to think that you can find another three
39 that are going to give you the Australian answer?
40
41 PROF GRAY: But again, you have got to use the most relevant evidence that's
42 available - evidence or vibe.
43
44 PROF JOHNSTONE: Well, "vibe" is a bit of a put-down to judgment, and
45 there's a lot of room for the kind of fundamental considerations that Ilan was
46 just giving us a moment ago. Rather than a mechanistic kind of just get the
47 numbers off the market and take them as givens.

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1
2 MR HOUSTON: I hear that, but one of the difficulties of those fundamental
3 considerations is that they themselves can involve a lot of judgment, and I'm not
4 quite exactly sure what you mean by "fundamental considerations", but beta in
5 particular is a market variable - it's something you need to estimate using
6 market data, and in my experience it's very, very difficult to estimate that by
7 reference to fundamental cash flow, and out of season - you can think of things
8 that might contribute in a positive way to beta, or things that might be in a
9 negative way to beta, but in Australia you can get to the point that you can
10 identify that, and that's a good way to think.
11
12 PROF JOHNSTONE: But beyond thinking about those things, and hypnotising,
13 it's helpful to have market evidence to rely on, I think?
14
15 MR HOUSTON: No-one doubts that, but I think to overview it one way or the
16 other is a licence to produce the answer that you like one way or the other.
17
18 ASSOC PROF PARTINGTON: The other issue of course is the issue of
19 gearing - right? So we've got these betas - are we just taking a simple average
20 across 70, or are we going to do something about gearing? Once you do
21 something about gearing it's very gameable because it depends on the gearing
22 adjustment you happen to use, and one gearing adjustment is probably not
23 appropriate across all these different places, because there are different tax
24 systems. Incidentally, the AER view's in adjustments is definitely wrong. I don't
25 know what the right formula is, but the one you've got is not right.
26
27 MR SADEH: Can I just go back Jonathan - I mean in the first part of the
28 discussion we had where we identify the list of parameters that we think some
29 are more longer term by nature, and some are more shorter term. I think we
30 touched on the market risk premiums should be something that - maybe it's a
31 bit in between - it shouldn't be fixed forever, but it also shouldn't be something
32 that just fluctuates every time you run a five year average. Heaven forbid
33 anything shorter because the listed market, unfortunately, unlike economic
34 theory, it's not perfect - it doesn't have perfect information - it responds; it lags
35 in those two things - I'm pretty sure that the listed market does not properly
36 reflect new technology risk, or other things, because everybody is coming to
37 grips with it. I think should always be that onus - I've come back to, about data
38 might change but unless there's a manifestly key change - not just an
39 updating - because stocks go up and down, that it shouldn't be a parameter that
40 just changes every cycle.
41
42 PROF GRAY: I'm sure we'll talk about gearing later, but I just can't leave that
43 comment that the AER's process for regearing is wrong, unchallenged. I think
44 it's the only correct one that's consistent with a firm that has a constant
45 proportion of debt finance.
46
47 ASSOC PROF PARTINGTON: It assumes that the debt beta is zero which the

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1 triple-b-rated debt says it definitely isn't.
2 PROF GRAY: Okay, so there's a formula and there's the debt data - we'll talk
3 about both, I'm sure.
4
5 MR HOUSTON: I think also in terms of data and the two extra elements - the
6 data set and its relevance to beta, and gearing. I'm not suggesting that one
7 should look at the gearing of overseas entities. I mean, gearing is sort of a fact
8 really that one can observe. It may be a little bit difficult to measure - there may
9 be some issues, but it's essentially a matter of fact. Data is quite different in
10 this instance. It's a statistically uncertain variable that you need to estimate,
11 and I think for that reason - it's quite different in terms of its properties, and I
12 think for that reason one should be much more willing to look widely in relation
13 to beta - which that's important in relation to gearing I think is an open or - it
14 seems less important. I'm not saying it shouldn't be done - it can be done, but
15 it's not something, I think, we need to worry so much about. The other thing is it
16 seems to me quite open in relation to gearing to look at businesses that would
17 be listed or present or listed in Australia that are in infrastructure but not
18 necessarily energy networks for evidence on gearing as well because although
19 obviously they're different businesses, they may or may not have similar
20 regulatory regimes but I think the gearing variable is something that you can
21 probably learn something from the infrastructure sector more widely whereas I
22 wouldn't suggest that for estimating the data.
23
24 DR MIRRLEES-BLACK: Are there any more questions ..(not transcribable)..
25
26 MR COX: Yes. I was interested in Graham's comment that you estimate beta
27 relative to a market portfolio and that differs considerably between countries.
28 Just would be interested in other experts commenting on the extent to which
29 they see that as a problem and how it might be dealt with.
30
31 DR MIRRLEES-BLACK: Stephen?
32
33 PROF GRAY: Yes I'm happy to go; so no beta estimate that you come up with
34 is going to be perfect so even the three comparative businesses that we have in
35 Australia ..(not transcribable).. are not perfect. There are unregulated assets in
36 some, some are gas, some are electricity, so even the three that we've got here
37 are not perfect comparators. Also the three that we've got here give quite
38 different estimates and estimates that change materially over time so let's not
39 think that the data set that we've got here is in anyway perfect. So then you
40 have the question of do we try to conceptualise our way to a beta estimate or
41 do we look at all of the relevant evidence that's there; and so there are - so we
42 have to cast the net wider and get even less perfect comparatives and so
43 there's two directions that we can cast that net wider. One is if we're worried
44 about differences in market structures and so on we can look at other
45 infrastructure type businesses in the Australian market so that's what Brad just
46 mentioned so that's one approach and then - so that's not perfect because
47 these are businesses that are not regulated network businesses but at least

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1 they're in the same market. The other approach is to go overseas where you
2 do have regulated network businesses but they're in different markets. So in
3 both cases relevant evidence that would inform your decision but not perfect
4 evidence and you'd take those things into account.
5
6 Is there a way of doing some kind of mathematical adjustment to the overseas
7 market portfolio of the overseas beta to Australianise it somehow? I don't think
8 there is. I think you just have to recognise that we need more evidence
9 because we don't have enough here to say anything with any sort of precision
10 and we need to take into account that we might give relatively less weight to the
11 comparator evidence that we have that's relatively less perfect for the task.
12
13 MR HOUSTON: I agree with that and we need to remind ourselves that the
14 CAPM model is a model of correlation with the entire portfolio. It just happens
15 that we measure beta by reference to listed entities because that's available
16 and in Australia we've got measured in Australian listed entities but actually the
17 theory of the CAPM says that we should be looking at the systematic risk by
18 reference to every asset. That's impractical, and so I think the - and
19 conceivably every international asset. There's no reason why you would bar
20 them but that's even more impractical so I think the reality is that we as Stephen
21 said we go and look at listed entities that we think are suitable in overseas
22 jurisdictions that we think are suitable and we look at their estimates of beta
23 against their market because we can measure that and then we - there is no
24 practical way of Australianising that so we take that for whatever its finding,
25 that's the practical reality. It's not perfect but that's what we have to work with.
26
27 MS CIFUENTES: But was it--
28
29 ASSOC PROF PARTINGTON: I'm not suggesting that we do Australianise it.
30 I'm just suggesting that if we go global let's do beta against a global portfolio.
31
32 MS CIFUENTES: That's right, I think as I understood Graham's comment it
33 was more around what is the in a sense the bench mark against which the
34 beta's are being determined so the US market, UK market and how do you
35 actually adjust for that. That's what I took your comment to be.
36
37 ASSOC PROF PARTINGTON: You just put all those markets ..(not
38 transcribable)..
39
40 MS CIFUENTES: And create your own--
41
42 ASSOC PROF PARTINGTON: --and do your beta against the global portfolio.
43
44 MS CIFUENTES: Comparatory index.
45
46 ASSOC PROF PARTINGTON: Well there are published indices, various ..(not
47 transcribable).. there is a global index.

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1
2 MS CIFUENTES: Global infrastructure index.
3
4 ASSOC PROF PARTINGTON: Or you can do it, you can put them together, it's
5 not terribly hard.
6
7 DR MIRRLEES-BLACK: Any other questions on this? Well we've now reached
8 the time for morning tea so it's come around quite quickly but we'll now take a
9 break until quarter past 11, so thank you very much everybody.
10
11 **SHORT ADJOURNMENT**
12
13 We now have 90 minutes on compensation for risks starting now. In order to
14 start off the discussion, I'd like to invite Graham Partington to say a few words.
15
16 ASSOC PROF PARTINGTON: Okay. Well, I'm going to start with where I think
17 there will be general agreement, hopefully, and that is that it is covariance or
18 systematic risk that matters, at least for the cost of capital risks, and they're
19 accounted for in other ways. That's the message of just about every major
20 asset-pricing model that I can think of, not just the CAPM.
21
22 So why are we using the CAPM pricing model? It's been around for 50 years,
23 more than 50 years, and it's the preeminent asset pricing model used in
24 practice to estimate the cost of capital. I understand that it's even used by
25 some of the regulatory businesses for some purposes like take-over appraisals.
26 It's survived what I have considered to be a very important test, the test of time
27 and also another important test, the test of practical use.
28
29 So what about the risks that are not systematic? Well, what do I mean by
30 "risk"? In general people think of "risk" as bad things that may happen. In
31 finance we think of "risk" as uncertainty. We don't know what the outcome is
32 going to be. So if a bad thing is going to happen for sure, like being certain and
33 correct that you're going to die by the end of next week, well, that's tragic, but in
34 finance it's not a risk because it's sure.
35
36 Bad things that might happen and are, therefore, uncertain because there's a
37 "might", they certainly affect value, no doubt about that, but they effect it
38 through the expected cash flow. There might be good things that might
39 happen, which would also affect cash flow.
40
41 So, conclusion, systematic risk going to the discount rate, everything else goes
42 into the cash flow. Beware of lazy and thoughtless adjustments to the discount
43 rate. Why? Because adjustments that get made to the discount rate tend to
44 get buried in there and not thought about carefully. It's easy to do it, let's do it,
45 let's get it out, and that can have a lot of unintended consequences. One
46 unintended consequence is the cash flow adjustments are often linear whereas
47 a discount rate adjustment by its very nature is a compound adjustment. You're

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operating a power series. So the adjustment is nominal. Therefore, if you do want to mess about with the discount rate, then check the cash flow consequences of your discount rate adjustment and then once you've done that, provided you're happy that you've got it right, then you don't need a discount rate adjustment, you've already done the job.

I predict that one aspect of the debate will be whether adjustments to the cash flow should come through depreciation, which is NPV neutral, or adjustments that are NPV positive, or possibly negative on the consumers side.

I fully accept that leverage increases equity risk and hence the equity beats it. However, in my opinion, the gearing adjustment is unnecessary and represents an attempt at spurious precision. Worse, as I've said, there's bias by assuming that the debt beta is zero and so that currently results in an upward bias estimate of the equity beta, currently given the assumed level, the actual levels of leverage. That will not necessarily always be the case.

Given that we are working with the plain vanilla weighted average costs of capital, which gives the required return on the assets and is independent of leverage, we could just go straight to estimating that directly for the comparison firms without relieving the equity beta. I predict that this may well be a hard-fought debate.

If it's not been clear from my earlier comments, and I think it probably has, I am opposed to the trailing average cost of debt because it results in a way that does not generally reflect the current required return and, hence, does not reflect the current risk of the investment. It reflects history.

David would take a slightly different tack. I don't want to verbal David, but I think he would agree that he would also say so does the mean cash flow, which is why we've heard such a lot from him about the cash flow. It's the ratio of the mean cash flow to the covariance that matters in David's analysis. However, the interesting implication for regulation, if you adopt David's approach, is that if the AER allows an increase in the mean cash flow, the required return goes down, which seems to be a bit of a catch 22 because if the required return goes down, that means you should be offering a lower cash flow.

I suspect, however, that problem goes away if the allowed cash flow results in a zero NPV investment. I think that's probably to do with the fact that you've got positive or negative aspects of value that lead the mean to matter, because once you have a positive or negative NPV, that NPV itself is a zero risk value. So it reduces the average risk in the portfolio, thereby reducing the costs again.

PROF JOHNSTONE: It would be a good time for me to carry on.

DR MIRRLEES-BLACK: Yes.

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1 ASSOC PROF PARTINGTON: Did I verbal you or was that fair?
2 PROF JOHNSTONE: Most of your story I would have agreed, taken on face
3 value a few years ago, but since I looked more deeply at the CAPM and gone
4 back to the earlier literature, you will find that the CAPM was actually being
5 oversimplified. I've had this explained to me by quite senior professors who say
6 that it was all about teaching it to undergraduate students and actually getting
7 acceptance, especially when the CAPM first came in, in the 60s, it was actually
8 a revolutionary thing that upset industry, and so it to be actually given a good
9 spin.
10
11 Now, the basic story is that the beta is measured by the covariance of returns
12 with market returns, but returns are driven by cash flow, and in denominated
13 returns is a value, the asset value, so there's quite a circularity and, hence, to
14 actually get to the true basis of what drives beta, you've got to look at the
15 statistical characteristics of the cash flow stream. Now, in the enumerated
16 covariance, definitely, and that's a really big point and it's probably going to
17 upset a lot of people in this room, but the covariance of a lot of regulated
18 revenue streams with the market is going to be very low, potentially close to
19 zero because the regulatory decisions are not influenced by market decisions
20 or at least not in a strong way like the NAB's revenue is influenced by market
21 conditions.
22
23 So fundamentally to deem the cash flows, which is what finance does,
24 fundamentally analysis, getting the cash flows, the covariance of regulated
25 income streams with market conditions, you have to say it's low, and that's how
26 all outsiders see this debate. I think people on the inside tend to get carried
27 away. You know, with a perspective which is not as down to earth and as real
28 as that.
29
30 The second point is it's risk per unit of mean and so here's a simple example
31 that will get the intuition across. Suppose you've got some future cash pay-off
32 which is random and it might have a variance of ten, any number you like.
33 Now, if it's means ten it's risky because if it mean is 100, it's pretty good. If it's
34 means a million, it's risk free. It's a million plus or minus hardly anything and so
35 it has to be risk per unit of mean. We can't just think of risk per se. It has to be
36 risk per unit of mean, so this comes back to this point that Graham was talking
37 about where if the expected or mean cash flow pay-off at the end of the period
38 to the entity increases, then under CAPM equilibrium the discount rate applied
39 to that cash flow, which is a random, it's eight lottery, the ex ante discount rate
40 applied to that would be reduced by the fact that it's mean is higher, and that's a
41 very unknown thing that's embedded in the CAPM.
42
43 It was actually described by Farmer in 1977 and it was lost track off. It's come
44 back to life in several places academically lately, but the simple way out of it is
45 to say whenever you talk risk, always talk risk per unit of mean, not just risk.
46 Also don't equate returns risk with pay-offs risk because the pay-offs actually
47 feed into the returns in quite a complicated time. The pay-offs are the cash

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1 flows. They feed into the returns in quite a complicated way and you only get
2 returns after you've got equilibrium prices and equilibrium prices are what the
3 CAPM produces. So there's kind of a tricky circularity going on there, but if we
4 actually try to track it down to the basics and look at cash flows, we have to say
5 that the statistical characteristics of any regulated tariff stream are two things in
6 the simplified mean variance world, and that is covariance of the cash flow with
7 the market and the mean of the cash flow.
8
9 That's before you start to get to the weaknesses of the mean variance world.
10
11 DR MIRRLEES-BLACK: Okay. Do you want to come back?
12
13 PROF GRAY: Just a very quick question. So what should the AER do
14 differently?
15
16 PROF JOHNSTONE: Well, that's asking too big a question for me to think of
17 immediately, but it's something that - I mean, we have to take this into account.
18 If we've been abusing or misusing the CAPM by interpreting it in a way where
19 we equate returns risk with cash flow risk, then, you know, we're on very shaky
20 ground and - now, we're meant to be the people providing expertise that would
21 avoid that kind of mistake.
22
23 PROF GRAY: Hence my question. Now, your papers make the point that beta,
24 in the ordinary sense, is a sufficient statistic. If I told you that this is the true
25 beta for a particular investment, under sort of your approach you would take
26 that beta and plug into the regular CAPM and that would give you an estimated
27 of the required return?
28
29 PROF JOHNSTONE: Yes. I think beta captures the cash flow risk per unit of
30 mean that I talked about. In fact, there's an equation in my papers that shows
31 the relationship between beta and covariance of cash flow mean. The big
32 premise that you came up with was that you could tell me the true beta. Now
33 that's where, of course, we won't be reaching that bar today.
34
35 DR MIRRLEES-BLACK: Graham, do you have a--
36
37 ASSOC PROF PARTINGTON: No. I think I should give everybody else a
38 chance.
39
40 DR MIRRLEES-BLACK: Greg?
41
42 MR HOUSTON: Well, I wanted to introduce this topic just by reaching back a
43 little bit to the one we just finished just to tidy up one thing, which is risk is
44 covariance with the market or it was something in - and Graham did suggest
45 that international beta, if you look at betas of companies offshore you might do
46 that in an international model. That would be a covariance with an international
47 portfolio. I think we can understand what that means, but the question of

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1 whether that would be relevant would depend highly on whether we were trying
2 to estimate an international foundation - not an Australian foundation model
3 from an Australian entity, but something else. I'm not quite sure, an
4 international something. So I think worth -and if you were to do that, you would
5 be needing to start raising all sorts of fundamental questions about every other
6 component of the international model. I'm not sure where you would be left or
7 what you would think you would be trying to do.
8
9 So I just wanted to, while agreeing with the concept of covariance, I just wanted
10 to sort of make that sort of very important qualification to what we were
11 discussing later in relation to the role of the international betas.
12
13 In terms of moving forward to conversation for risk more generally, I don't want
14 to sort of tangle quite yet with the details of what we've just heard, but I'm sure
15 we will need to, but I think it is just as important to say that to remind ourselves
16 with Stephen's proposition, which I agree with, that all risks need to be dealt
17 with somewhere. Some are systematic, some may not be, that the covariance
18 that we measure with beta is a measure of systematic risk and that properly,
19 when it's put through its foundation model is applied to expected value cash
20 flows which have the opportunity to incorporate other risks or the consequences
21 of the expected values of other risks that may not be or are not systematic but
22 may be present and they are relevant this, I think it's pretty accepted, for
23 investors, in particular the - I mean, if risk is symmetric, then the expected value
24 and the most likely value will be identical, but if risks are not symmetric, either
25 on the upside or on the downside, then you have the situation where the
26 expected value may not be the same as the most likely value and that's when
27 your cash flow is part of the equation, which is really reflected in that PTRM
28 building block framework, need to deal with the possibility that it may be
29 asymmetric cash flow and incorporate them into the cash flows to which we are
30 applying this foundation model.
31
32 I think it's quite an important foundational thing for the conversation for the rest
33 of the discussion.
34
35 DR MIRRLEES-BLACK: So I think we've heard expressed, Stephen, in terms
36 of, yes, systematic, non-systematic risk, Graham's concurred with that. Greg,
37 you've concurred with that and also I think we've also heard commonality of
38 view in terms of cash flows.
39
40 Ilan, would you--
41 MR SADEH: Gosh, statistical concepts, which I have to say I don't naturally
42 turn my mind to day in and day out because I'm more focused on how do we in
43 the market actually think about things, and one thing I'd say - I am not sure if
44 this wraps around the covariance point, I might be confusing concepts, but I
45 think back to an example of the Sydney Desalination Plant, which isn't an AER
46 regulated asset, but, nevertheless, it illustrates the point. There was thinking
47 around that initial structure that consumers - sorry, the network should be

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indifferent to whether that asset is on or off. Now, think about it if it were done another way, that they would say if you're required to be turned off, don't worry, we will make you take the risk on it because when you're turned on, we'll pay you ten times the amount and you'll get nothing when you're turned off. The mean about that might be the same, but it's a hugely different risk. So I do just bear that in mind.

The market does look at the CAPM model. In simple terms, there are extreme dangers in looking just at ongoing listed observations on it because if listed markets had perfect knowledge and weren't dislocated by whatever other forms of views they have on things, then the world would be a very different place, but to then mathematically use those points straight in to a CAPM form is, as I said, is dangerous in certain areas, without assuming a level of non-daily movement.

Just bringing that back, though, I mean, with the difference between systematic and non-systematic risk, so if we're saying that the non-systematic risk needs to be dealt with in the expected cash flows, and I think the commonality have a view of that, what does the AER need to do differently in order for that to be reflected in the regulatory process and is that something which there needs to be an explicit statement of this guideline? I suppose I'm saying what's the impact of the comment on non-systematic risk for the rate of return guideline?

PROF JOHNSTONE: I think the mindset of the AER should be very much on cash flows rather than on market returns, because that's the basic reality of the fact, and that's what's regulated if AER regulates the cash flows, not the market returns. So risk of the covariance mean, they should be directed at the cash flow streams and things like, for example, the fact that assets aren't optimised tends to make these cash flow streams very immune to market influences and actually very certain. So in a finance sense, if you wanted a finance textbook example of a zero beta asset, you'd probably say the closest thing you could think of is a regulated tariff stream.

MR HOUSTON: Perhaps I can make a direct answer to your question, which is I think at a minimum, the rate of return guideline needs to be explicit that the - assuming the foundation model continues to be the basis for engagement, that the risk that that is encapsulating is only systematic risks and that the compensation for that systematic risk needs to be applied to cash flows that are developed on the expected value basis.

Now, at the moment if one was to read this discussion paper on the topic, you wouldn't see that observation anywhere in that discussion paper. There is observation to the effect that idiosyncratic or non-systematic risks don't need to be priced into the foundation model framework, which is correct, but only correct if any asymmetries in those risks are incorporated into the cash flow. So I think that's a missing component of the framework that is being set forth in this issues paper.

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1 DR MIRRLEES-BLACK: So making that explicit in your view would be helpful.
2 Do others concur?
3
4 PROF GRAY: Yes. I think as I said earlier, that a good guideline, a good
5 determination, would set out all of the risks that have been considered and say
6 where they have been considered and where they've been addressed and so
7 that all stakeholders could see the impact that they have on the regulatory
8 allowance. So in some cases that will be incorporated within the beta estimate
9 because it's a market-related risk, and in some cases it will be, perhaps,
10 potentially, an adjustment to the depreciation allowance. In some cases it will
11 be an operating cost allowance, an insurance premium. So storm and bushfire
12 risk would be an example of that.
13
14 The danger is, if we're thinking in a CAPM framework, that we try to go down
15 the process of classifying risks into two different buckets, which is fraught with
16 difficulty because it's not either purely systematic or purely diversifiable, and
17 those that happen to be put in the diversifiable bucket, they are not relevant to
18 the allowed rate of return, but then somehow get missed when you come to the
19 cash flows. I think that's the important point from a high-level perspective.
20
21 PROF JOHNSTONE: I like that approach very much and I think that gets down
22 to basics, individual risks like, you know, the risk of bushfire affecting
23 infrastructure and having been in place and things like that, but the only
24 problem with that is if you say that the risks are related to the market and
25 should still be rewarded, that you're departing entirely from the CAPM
26 framework that we're meant to all be working in. So that would, therefore,
27 suggest picking and choosing of the solution to suit the moment.
28
29 DR MIRRLEES-BLACK: Anyone want to come back on that or--
30
31 MR SADEH: Sorry, can you just explain that to me? What do you mean by--
32
33 PROF JOHNSTONE: Okay. So, for example--
34
35 MR SADEH: --not taking any risks in ..(not transcribable)..
36
37 PROF JOHNSTONE: I think Steve and I agree on this and that is it's quite
38 common in a fundamental cash flow analysis in corporations, at least the way
39 we teach at the universities - it's a little bit specific risk that organisations face
40 and there are some complicated ones obviously in these energy infrastructure
41 firms. So we can go through things like this bushfire risk that Steve mentioned
42 that we would not commonly think of and try to partition it between is it a
43 systematic risk or is it an unsystematic risk. Bushfire risk would be regarded in
44 a textbook as classic unsystematic, completely unrelated to the market.
45 So according to this CAPM framework these entities should get no reward for
46 bushfire risk. That's just strict textbook interpretation which is my point about
47 how - the CAPM is just the incredibly narrow framework and it's not necessarily

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1 going to give us the kind of picture of reality that we want, but when we do get
2 down to reality I come back to this one point which is basically the elephant in
3 the room and that is a regulated tariff stream does not have a high covariance
4 with the stock market.
5
6 PROF GRAY: We'll come back to that but I think the first point is - when you
7 say that the diversifiable risk, like storms and bushfires, should have no reward,
8 so what you mean there, I think, is that that doesn't affect the required return,
9 but that doesn't mean that it's irrelevant to the allowed return. So if you take an
10 example, suppose you're unable to ensure storm and bushfire risk for a
11 moment and there's some chance each year that your network will be affected
12 by storms and bushfires and you'll bear a significant loss, so the number that
13 comes out of the CAPM - this is Greg's point - is an expected return, so that's
14 the sort of return that investors should be able to achieve on average.
15
16 So if we set the allowed return equal to the expected return - and there is this
17 storm and bushfire risk - that means that in any year the best you can do is to
18 get the allowed return but there will be some years when you get less than that.
19 So your expected return now is less than the CAPM estimate of the required
20 return. Although there's no reward in the sense that a required return doesn't
21 go up or down in relation to this, the allowed return may have to be set above
22 that CAPM estimate so that, on average, when you take these risks in to
23 account the expected return matches your CAPM estimate and I think that's
24 important.
25
26 PROF JOHNSTONE: I think a fair view agrees with that except for the fact that
27 it does depart from the CAPM strictly interpreted, which is apparently what
28 we're hinging the whole frame upon.
29
30 MR HOUSTON: No, I don't think it does depart from CAPM, that was the point.
31
32 PROF JOHNSTONE: It definitely does.
33
34 MR HOUSTON: The CAPM framework is to be, or is only valid when applied to
35 expected value cash flow. So it just means it's in another part of the framework.
36 I think there's no inconsistency in here. It's just a question of where rests are
37 reflected.
38
39 PROF JOHNSTONE: The CAPM says simply that the market will give no
40 reward to organisations for taking risks which are zero covariance with the
41 market, and so bushfire risk for example.
42
43 MR SADEH: That's what a textbook says. If that were a case that ASX200
44 would never outperform the government bond rate.
45
46 PROF JOHNSTONE: Okay, but what I'm saying is we're now blowing the
47 CAPM away and once you do that then you get in to the world of an allowed

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1 return which is then completely judgmental.
2 MR SADEH: Can I give you my thought? I remember from my old stat days,
3 the second that you start to relax some of the CAPM assumptions you
4 exponentially blow out the complexity form and I take that, so let's just take the
5 simple CAPM approach for a second - in the investor universe, from our
6 perspective, both systematic and non-systematic risks are - certainly systematic
7 and some of the non-systematic risks are in our CAPM because our CAPM, for
8 our love of ancient Greek, also has an alpha in it. Some alpha you deal with
9 through your expected cash flows and some are directly in the alpha and that is
10 one reason that market returns often look higher than a regulated way.
11
12 At least in my own rationale, how I justify to myself why does it make sense the
13 way that the AER is currently apply its perspective is comes down to the whole
14 premise of the benchmark entity. Non-systematic risks should be in the cash
15 flow allowances and not in the WACC because you don't want to give
16 everybody the same allowances for asset specific issues that you want them to
17 efficiently deal with because you want to give them the incentive to deal with it.
18 That's why I separate - that's why to me there's no alpha in a regulated CAPM
19 but I do see it in a market CAPM.
20
21 PROF JOHNSTONE: In the end, whichever way you put it, if you're going to
22 offer returns that are outside what the CAPM says you're departing from the
23 CAPM and then that just changes the game entirely.
24
25 MR HOUSTON: I very significantly disagree and if we go just to page 24 of the
26 AER discussion paper, I'll read it for you. It quotes there from Brearley in my
27 eyes and it says, "Investments" - this is the page that has three charts with
28 different shapes of return distribution probability and it says, "Investments A and
29 B both have an expected return" ..(not transcribable).. my point is simply that
30 the context for the CAPM, there's a discussion about expected returns and it's
31 nothing more than that. It's not inconsistent with the CAPM, it's indeed
32 fundamental to the CAPM and my point is simply you need to be very careful
33 that the cash flows to which you're applying this estimated return are either
34 symmetric, so that the expected return is the one equal to the most likely return
35 or, if not, you need to make an adjustment to those cash flows so that you are
36 applying them to the expected return. It's a textbook requirement of the model.
37
38 PROF JOHNSTONE: Same old story though - expected return doesn't offer
39 any return for unsystematic risk like bushfires and, secondly, once you start
40 worrying about the statistical characteristics of the cash flow you think about
41 something like variance, it's symmetric, what, you might have a normal
42 distribution symmetric, but if the variance is all up side and the CAPM is hardly
43 valid in that, the unpredictability tends to be positive rather than negative, and
44 that would be a good reason to depart from CAPM because the CAPM is
45 presuming that this risk is symmetric, that is like down as up, and I think that
46 consumers wouldn't see it that way.
47

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1 PROF GRAY: Do you agree with the following two propositions: (1) that the
2 CAPM gives you an estimate of the expected return and (2) that the regulator
3 should set the allowed cash flows so the investors can earn that level of return
4 in expectation?
5
6 PROF JOHNSTONE: Yes, that just says - you just said a CAPM and the
7 CAPM says expected return is the return related to the beta or systematic risk
8 of the asset and, therefore, no bushfire reward.
9
10 MR HOUSTON: The last part - I would agree with everything you said except
11 perhaps the last part is not - it doesn't necessarily follow.
12
13 ASSOC PROF PARTINGTON: Can I just jump in? Certainly the CAPM says
14 you don't get rewarded for varying a bushfire risk but bushfire risk affects your
15 expected cash flow.
16
17 MR HOUSTON: Correct.
18
19 ASSOC PROF PARTINGTON: So your cash flow should allow for the cost of
20 bushfire risk ..(not transcribable)..
21
22 MR HOUSTON: Precisely.
23
24 PROF JOHNSTONE: Actually the other point is correct, if bushfire risk was
25 high the mean cash flow would be lower, expected cash flow would be lower
26 and the CAPM required rate of return would be higher. So again it comes back
27 to this fundamental point that it's covariance per unit of mean and if we miss
28 one half of the ratio then we go down the wrong path, whichever path that is,
29 whether it means a higher or lower--
30
31 PROF GRAY: But if we have a good estimate of beta that we're happy with we
32 don't need to worry about that. Is that right?
33
34 PROF JOHNSTONE: Beta, in principle, encapsulates all of that but, of course,
35 in reality doesn't go close.
36
37 DR MIRRLEES-BLACK: I think we may have a measure of agreement on this
38 and it may be that there's four and a half agreements, maybe that in the joint
39 statement we might be able to come up with a form of words which is helpful
40 but I think clearly there's a distinction between systematic and non-systematic
41 and I think that the concurrence that we should have explicit recognition of the
42 non-systematic in the cash flows, which isn't, and that would be helpful for the
43 regulatory process. Does everyone agree with that?
44
45 MS CIFUENTES: I think that's right.
46
47 DR MIRRLEES-BLACK: Do you have any questions that you want to raise with

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1 this issue?
2
3 MS CIFUENTES: No. I'm interested in the statement that all non-systematic
4 risks should be compensated through the cash flow.
5
6 DR MIRRLEES-BLACK: Okay.
7
8 MS CIFUENTES: I have no difficulty with the general proposition of
9 non-systematic risk flowing through cash flow or that is the appropriate place
10 within which they should be considered. I'm just wondering whether the "all"
11 was a stake in the ground or it was a grammatical expression.
12
13 DR MIRRLEES-BLACK: Okay. Graham?
14
15 ASSOC PROF PARTINGTON: "All" - if they affect the cash flow they're
16 relevant; if they don't affect the cash flow they're not, and then the judgment of
17 the regulator is, is this actually a risk that is going to have an effect on the cash
18 flow of substance and should be accounted for. Obviously if it's trivial--
19
20 MS CIFUENTES: Can I give an example? Technological change - how would
21 you suggest that the AER assesses that?
22
23 ASSOC PROF PARTINGTON: Assessment - that's a difficult issue. What I
24 think you should do - and what was technological change and why - it probably
25 applies that some of your existing assets are redundant, their economic lives
26 shortened, their residual value will be less, increased depreciation allowance.
27
28 PROF JOHNSTONE: They're not optimised though. If you take rooftop solar,
29 for example, that could reduce demand a great amount but under the revenue
30 cap it doesn't affect the certainty of the tariff stream, at least not in the
31 foreseeable future.
32
33 MR SADEH: We're not having a debate about RAB today. I'd rather not open
34 a long discussion--
35
36 DR MIRRLEES-BLACK: Which element of RAB?
37
38 MR SADEH: Lockdown.
39
40 DR MIRRLEES-BLACK: I think that there is a - it was raised in the issues that
41 have been discussed by the group, the question as to whether there's a
42 downside risk from not being able to recover RAB and it's a question of how
43 does that enter in to the calculations. So I think that's legitimate.
44
45 PROF GRAY: My understand is that the AER's process to date has been to set
46 allowed returns on the basis that there would not be any write-down, that the
47 lock in roll forward process was sort of one of the fundamental tenets in that the

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1 allowed returns were set on that basis. So to the extent that that's not going to
2 happen during the currency of the guideline, we don't have to accommodate it
3 anywhere because it's not relevant. That would be one example. If that were
4 to occur - you know, there's a heightened level of political risk certainly for these
5 networks. If that were to occur during the currency of the guideline that would
6 certainly be an example of something where the guideline would perhaps be
7 reopened and reassessed in relation to that risk that, henceforth, has not been
8 compensated.
9
10 MR SADEH: That's a material risk. That's not just a, "Oh, well, there's another
11 element of the framework that needs to be reconciled from an investing point of
12 view." That's one of the fundamental premises behind the whole investability of
13 the framework. I know that when we look at this or other jurisdictions, I know
14 when overseas investors come here, one of the first things on your
15 understanding of the regulatory framework is how does the RAB work? Can I
16 get locked down at the next time because quite simply, as a network operator, I
17 don't have choice over where I make the capital investment decision that's
18 required under regulation under licence. It's unlike another industry where I get
19 to do a feasibility, I get to see is this the right thing to spend - I can't stop
20 spending it so, therefore, I look at - if I'm in distribution, you know the current
21 rules there that prohibit log down; if I'm in transmission, the very limited ..(not
22 transcribable).. and I say that gives me comfort that I can go and spend capital,
23 as I'm required to do.
24
25 DR MIRRLEES-BLACK: I think there was one issue that came up in the
26 pre-discussions which, I think you're saying, is not correct simply to ignore and
27 assert unquestionably that the existence of monopoly, in combination with
28 regulatory framework, can guarantee that RAB will be honoured and that was--
29
30 MR HOUSTON: I think I agree with the discussions that's just being had and I
31 don't really have much to add to the point of principle. There are questions as
32 to the evaluation of these risks, I mean, perceived raised technology risk. I
33 mean, probably that manifests itself in terms of the integrity of the assets and
34 the remuneration of them. So if that's all fine then that's all fine, but at the
35 moment that's not the case, then we need to completely rethink the framework
36 in which we're discussing, the rate of return guideline probably needs to be
37 reopened. So I think where there's a measure of agreement around principles
38 and how they all fit together here, the practical question that may arise is what
39 is the size and shape of those risks, if anything. I don't know if that's
40 really - this is the place where are able to make that, but at the moment I think
41 it's reasonably clear.
42
43 DR MIRRLEES-BLACK: I have a few points there which we haven't quite
44 delved in to in terms of what is technological - we talk about technological risk
45 and people refer to it a lot. What is this technological risk and is it something
46 which is - is it systematic or non-systematic? Is it something which - to some
47 extent are these issues of technology risk - are they a red herring from the

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1 discussions that we should be having in terms of setting the rate of return and
2 we can actually lay them to one side, or are they something which is
3 fundamental to the discussion because it does affect genuinely the way the
4 investors would think about investing in these networks?
5
6 PROF JOHNSTONE: I think it's a good illustration of what's Steve's saying, it
7 will be a very good exercise to go through fundamental risks, physical and cash
8 flow, one by one and understand them and if you want to work in CAPM
9 framework, some of them will be rewarded, some of them will half systemic half
10 unsystematic, but to get to that level will give some clarity that you won't get by
11 looking at market betas.
12
13 ASSOC PROF PARTINGTON: I've got a question clarification to supplement
14 that.
15
16 DR MIRRLEES-BLACK: Yes.
17
18 MR COX: A lot of the discussion has been about CAPM and the equity beta
19 but the question is what risk should be in the rate of return, which strikes me as
20 a slightly different question. I think Graham addressed that to some extent by
21 saying that for pragmatic reasons you should put the more systematic risks in
22 the cash flow bucket rather than the rate of return but that was essentially for
23 pragmatic reasons, I understand it.
24
25 ASSOC PROF PARTINGTON: Just it's consistent with the theory. That's the
26 correct thing to do. People stick things in the discount rate, like ..(not
27 transcribable).. sometimes because they just don't really know or they can't
28 quite work it out and so, "We'll stick in half a per cent." The dangers in that are
29 that by the time you get 20 years down the track that half a per cent has
30 actually compounded to be a pretty large number.
31
32 MR SADEH: Alpha is very subjective. From my perspective, the distinction I
33 draw is the nature of the incentive framework that you want regulations to take
34 which is set for the benchmark efficient entity you want each network to be
35 responding to its own issues and circumstances and, therefore, not get identical
36 allowances to everybody else for asset specific risks.
37
38 MR COX: What I wanted to check was whether that was common ground in
39 light of the conversation.
40
41 PROF JOHNSTONE: To me the question is probably not fully solved is how far
42 beyond clearly systematic risks should entities be rewarded.
43
44 PROF GRAY: I guess we'll come to that, the estimation of systematic risk in
45 the next session. I just add one point which is that if there's a view that a
46 particular risk, technology risk or whatever it might be, is systematic or partially
47 systematic and, therefore, would be reflected in and rewarded by a beta in the

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1 CAPM. To the extent that there has been a change in those risks quite
2 recently, so that sort of technological risk, the changing role of the networks
3 having to deal with distributor generation and two-way cash flows; another
4 example would be the political risk that we see manifest itself in a couple of
5 places. These are all things that have arisen since the 2013 guideline. So to
6 the extent that we think at least maybe some of that has a systematic
7 component and will come through beta, it will be very important to look at how
8 beta estimates have changed since 2013. If we're saying that those things are
9 going to be picked up in beta we'll have to look at the more recent evidence, if
10 that's to be.
11
12 MS CIFUENTES: On that, do you have an intuitive bill for whether those sort of
13 risks have been reflected in beta?
14
15 PROF GRAY: My view is you look at the evidence, right. So the data is going
16 to be there, we're going to look at--
17
18 MR SADEH: My view would be that the listed investors ..(not transcribable)..
19 having factored in--
20
21 MS CIFUENTES: Haven't?
22
23 MR SADEH: Haven't factored in anything for any technology because quite
24 simply there are many more experienced people in the profession, regulation
25 and engineering ..(not transcribable).. who don't know what the facts are going
26 to be, so a listed market is even less qualified to form a view.
27
28 ASSOC PROF PARTINGTON: It seems to me it's a diversifiable risk. If I'm
29 worried about rooftop solar, I just buy shares in a rooftop solar company as well
30 as buying hold in my utility shares - problem solved.
31
32 MR SADEH: But how would you deal with - I mean, I'd like to talk through
33 these examples because they bring out the issues. Let's say that networks are
34 more uniformly impacted by technology, right, and neither is transmission
35 versus distribution and within distribution an area that has a much lower density
36 or households, is likely to be more impacted by future technology on solar or
37 electric vehicles, then--
38
39 ASSOC PROF PARTINGTON: Hold a portfolio--
40
41 MR SADEH: --apartment fence and--
42
43 ASSOC PROF PARTINGTON: --across a range of utilities, right, problem
44 solved.
45
46 MR SADEH: --and how to you allocate that?
47

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1 ASSOC PROF PARTINGTON: Now, if you're not to diversify an investor then,
2 yes, you do have a problem, but that's not the investor we're assuming in the
3 CAPM. We're assuming this is a diversified investor and investors can diversify
4 a lot more quickly and cheaply than companies can, although from what I
5 observe, some companies are diversifying. I think I've got some energy
6 company offering to supply me with rooftop solar, right, so they're diversifying
7 by buying the physical assets.
8
9 MR SADEH: I don't agree with that. That sounds to me almost circular, that
10 everything is diversifiable and therefore there's no--
11
12 ASSOC PROF PARTINGTON: No, it's not. That's the point, systematic risk
13 isn't diversifiable.
14
15 MR SADEH: But then there are some elements of new technology that are not
16 diversifiable, that are peculiar to the specific network. Climate change is
17 probably another good example.
18
19 ASSOC PROF PARTINGTON: Somebody will be producing derivates on
20 climate change any time soon.
21
22 MR SADEH: Yes, but--
23
24 ASSOC PROF PARTINGTON: Just like you can buy temperature - well, you
25 can already buy temperature.
26
27 MR SADEH: Sure but a coastal network--
28
29 ASSOC PROF PARTINGTON: And rainfall derivatives and whenever some
30 other risk pops up that a smart bloke in an investment bank says, "We can
31 make money out of this"; they'll be in coastal flooding derivative. We already
32 have catastrophe bonds which allow you to ensure against catastrophes, right.
33 Many of these risks have just been managed by investors through the capital
34 market if they're taking a diversified portfolio. If they're not taking a diversified
35 portfolio, well, yes, there's a problem but then should the consumer be
36 compensating them for that problem? Probably not.
37
38 MR HOUSTON: Those risks are diversifiable providing the cash flows reflect
39 the mean cost to those things.
40
41 ASSOC PROF PARTINGTON: Yes, we agree. We agree. So if there's
42 something of that that may happen that's uncertain if it will affect the cash flows
43 the expected cash flow that investors are valuing should be ..(not
44 transcribable)..
45
46 PROF JOHNSTONE: Conversely something good might happen, like an
47 increase.

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1
2 MR HOUSTON: So I think the question--
3 ASSOC PROF PARTINGTON: As well, yes, good example, right - yes, you
4 know, we're worried about rooftop solar. What about an explosion in electric
5 cars? Right. Then there will be people all over the place wanting to recharge,
6 massive demand, electricity whizzing up and down the network in all directions.
7
8 PROF JOHNSTONE: So these sort of risks are the ones that the CAPM sees
9 individual organisations as just potential casualties and the market will diversify,
10 the individual organisation ..(not transcribable).. says will often find it very hard
11 to diversify internally and maybe doesn't even want to but under the CAPM
12 that's a risk that there ought to be an individual organisation that has to take
13 and doesn't get rewarded for. That's the weakness for the CAPM framework
14 from the point of view of asset owners. It actually doesn't offer rewards for
15 these sorts of risks.
16
17 DR MIRRLEES-BLACK: I think we're saying that the technology risk is a risk
18 but it's not a special risk. It's a risk which will be dealt with within the framework
19 of the model for compensating risk that we've discussed and that's just one of
20 those factors. The board doesn't need specifically to consider this especially in
21 developing the guideline. I think that's the--
22
23 PROF GRAY: Further to the last point, I think the way it would be dealt with is
24 individual networks which have different sensitivity for this kind of risk will make
25 submissions about how these sorts of risks will impact them.
26
27 MS CIFUENTES: Just to bring that out, Stephen, so we would expect to see
28 those proposals would address it as part of the Opex, for example, rather than
29 part of rate return.
30
31 PROF GRAY: Yes, I'd expect so.
32
33 MS CIFUENTES: Which is what we would normally expect and what we
34 actually do see.
35
36 MR COX: I guess the problem that arises for us is assymetric information, the
37 businesses know more about the risks than we do. We might hear about the
38 risks that are detrimental but not those that might be in their favour. I mean,
39 that seems to me is the potential problems ..(not transcribable)..
40
41 MR SADEH: I think that's a very true point and I don't know - I think trying to
42 isolate the impacts through a traditional beta would never give you an answer
43 any way. I think it's just eventually going to be something that everybody starts
44 to understand more and you talk to people - again I'll bring up the example of
45 climate change; you say to people, "How's climate change going to affect a
46 potential network? How's it going to impact energy demand?" Climate change
47 doesn't mean that weather is always going to be warmer. It just means it's

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1 going to be more volatile. So what it might do summer peak is totally different
2 to what might happen - it doesn't mean the winter peak goes down. It might
3 make winter events more volatile. I really don't know. I think we're going to
4 have to keep sharing a lot of information. It's the only way I can think about it.
5 At the moment people that I talk to, the understanding of climate change is
6 moving from conceptual to starting to quantify it but it's by no means properly
7 know.
8
9 PROF GRAY: I think my earlier point of evidence versus vibe applies in both
10 directions. So it wouldn't be acceptable, I don't think, for a network to say,
11 "Climate change, climate change, give me another $50 million." There would
12 have to be evidence put up in the same way. It's got to be symmetric.
13
14 ASSOC PROF PARTINGTON: If I can go to your point of asymmetry and the
15 delivery of information, which I think is what you're interested in--
16
17 PROF GRAY: Yes.
18
19 ASSOC PROF PARTINGTON: One thing you can do is see whether what
20 they're telling investors is what they're telling you, right, and then if they're
21 telling investors and you the same story you can have all the more confidence
22 in the story you're being told, but if you see, right, they don't seem to be saying
23 anything about technical risk affecting the value of the enterprise to their
24 investors, they don't seem to be writing down asset values on the basis of
25 technology risk, they don't seem to be voluntarily restricting their investment - I
26 know we've got statutory obligations but if the regulator cuts - what do I have to
27 invest and I'm worried about technology risk and my assets become obsolete,
28 I'd be saying, "Whoopee, thank you very much." I might not meet my statutory
29 obligations but then it's your fault for when I've got less assets at risk. So my
30 suggestion is look for other evidence that's consistent with the story that's being
31 told. If there's consistent evidence, data consistent with the story, then you can
32 have a lot more confidence.
33
34 PROF GRAY: Which is not to say that these reasons are made up, so there
35 are discussions being held in board rooms every month about the sorts of risks
36 that are being talked about here. There are companies already provisioning for
37 more storms and bushfires, the political risk, loss of merits review and those
38 sorts of things, and technological change - they're things that are being
39 discussed in board rooms every meeting.
40
41 MR HOUSTON: Just because - the asymmetry of information problem is
42 intrinsic to regulation, always has been, always will be. It's a problem that
43 regulatory framers are constantly evolving to try and address and I think we all
44 recognise that as a challenge, but that doesn't mean to say that you can, as I
45 say, rely on the vibe. It means that you have to put a high standard of evidence
46 and accountability for whatever is put forward on this front. I think we can't
47 pretend that there aren't some real issues here and to just take it away from this

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1 jurisdiction - I mean, I think it's a great study of the example of the Christchurch
2 electricity distributor, Orion, which suffered a major earthquake. The
3 depopulation of the residents living there was by 20%, massive to their revenue
4 for two to three years, despite whatever regulatory rate will say about revenue
5 cap or price cap, there's just no customer - there were less customers to
6 recover the revenue from, and major expenditure.
7
8 That expenditure ultimately finds it way in to the RAB, so that's all good, but
9 there's a huge revenue hit that that entity faced and by the time it could get to
10 the regulator and have a reset they took that process and only looked forward
11 from the point of the reset. So the revenue was a - which was tens of millions,
12 and a hundred million dollar a year business, was lost forever.
13
14 The point is, what should the regulatory framework make of that possibility?
15 You could think of it as a major bushfire, that took out a very large proportion of
16 the network, or something similar. I think we just need to be mindful that these
17 events do happen, and our regulatory framework is not very well designed to
18 deal with them. But we just need to be mindful of them, and when we talk
19 about the framework we're setting up, we're not in the rate of return we're
20 estimating, in any way allowing for those kind of possibilities. Yet investors do
21 take them into account.
22 Another entity which I could, an airport in New Zealand that's very prone to
23 earthquakes. They have choices about the amount of insurance they buy. And
24 to insure yourself fully against a sort of Christchurch like catastrophic event
25 from an airport, including loss of revenue from a major closure of that airport, is
26 prohibitive. Yet at least in theory they could take out that insurance, and put it
27 in their operating costs, and put it forward to you, and you would perhaps feel
28 proper in including that as an operating cost that was part of their business.
29 And the reality is, businesses can't insure for everything completely. They are
30 accepting some risk onto the balance sheets of their shareholders, and their
31 shareholders think about that when they are coming to investment decisions in
32 their business.
33
34 PROF GRAY: That's the last point from earlier. If there's not an earthquake
35 that year, then it appears ex post as though the business is over--
36
37 MR HOUSTON: Correct.
38
39 MR SADEH: We worked through all these scenarios in a lot of detail every time
40 we look at an investment. We look through what would happen if there was a
41 major bushfire, versus a fire within a substation, if some things are insured as a
42 matter of practice, some things aren't. What would happen for electromagnetic
43 frequencies what would happen for a lot of different events. One of the other
44 current topics that get a lot of airtime is cyber-security. How we're dealing with
45 that evolving risk which we didn't know much about a few years ago, and now
46 there's both additional regulatory positions on us, as well as just heightened risk
47 happening. I think it would be very helpful at the point, talked about earlier,

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1 about making an acknowledgement about non-systematic risks; but also having
2 at least an acknowledgement of what some of those risks are. And to the
3 extent there's a position, yes, we think it's important; but if it is, the more clarity
4 on these kind of points, we want no value, as on field for value on the kind of
5 changes in the new tech, but at least we can monitor it.
6
7 DR MIRRLEES-BLACK: I think that's obviously something we need to deal with
8 more in the paper. Clearly there's a distinction between systematic,
9 non-systematic; whereas with these large, uninsurable events, which may have
10 some serial impacts on shareholder value, which it's not even within the bounds
11 of the framework, in terms of what can be considered to be an expected
12 cataclysm. I think that's something which, again, it needs to be an
13 acknowledgement, and we can set that out clearly in what we submit to the
14 written report.
15
16 Shall we move on to other aspects of risk, unless you have other issues on
17 this?
18
19 MS CIFUENTES: No, but I'll be interested in hearing a little bit more from Ilan
20 about how the investors actually try and put a value on some of this risk,
21 because in a sense that's what the regulator is being asked to do. So we're
22 being asked not just to identify cyber-security or anything as a potential risk, but
23 then to make an assessment for each of the businesses, and then make an
24 adjustment, say through cash flow.
25 So I'd at some point be interested to hear how you do that, and I think I've
26 heard you say we don't actually put a value on it.
27
28 MR SADEH: No, we're coming to grips with it, so when we see, for example, in
29 the recent New South Wales privatisations when there was a new licence
30 condition around no offshore, certain maintenance activities, we therefore went
31 out and said okay, we typically get A and B and C firms overseas cause they're
32 accredited, but now we can't. How much extra does it cost us to source things
33 locally, and that's effectively the cost of the risk. How much is, you know, as a
34 starting point, the compliance team of people have to get, getting to understand
35 how much is the extra cost of looking after different licence conditions.
36
37 DR MIRRLEES-BLACK: In the remaining time, we've got just over half an hour.
38 I was going to propose we cover three issues, that will at least be helpful. One
39 is, we've got differential compensation for risk for, as between transmission
40 distribution, gas, electricity or price control. That's one issue we can cover.
41
42 The second is, there's an issue that's been raised in questions, is investor
43 confidence. Has investor confidence in terms of risk, how should that be
44 reflected in the rate of return guideline.
45
46 The third, which is partially a hangover from the previous session, how should
47 we deal with the possibility of re-opening the rate of return guideline. I think it is

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1 important we cover that. So those are the three issues, do you want to cover
2 each of those.
3
4 So if we start with differential risk for different types of business. Any views?
5
6 MR HOUSTON: I'm happy to, my main observation is that I think the
7 discussion paper kind of consigns that issue, very quickly to being, not an
8 issue. Essentially by saying that, put a regulatory framework, so any business
9 that operates in that regulatory framework will have the same risk, therefore we
10 don't need to worry about potential distinctions between transmission
11 distribution, gas, electricity and so on.
12
13 I think that's too dismissive of this issue. There are some reasons why one
14 might expect, for example, a gas business, to have different systematic risk that
15 electricity. And particularly with the existence of, generally, higher income
16 investors and demand for gas. And I'm not sure if you're aware, but this issue
17 has come up in New Zealand, it's got quite a long history, and they've chosen
18 different choices at different points in time. But to see a higher beta value for
19 gas pipeline businesses.
20
21 Essentially after a combination of considerations that involved, firstly, evidence
22 as to differential rates of income investors, which actually, as it happened,
23 started its life through academic papers in Australia, about the income investors
24 in differentials here. On the conceptual hypothesis that that could affect
25 systematic risk. And then gradually worked through looking at samples of betas
26 from overseas, because essentially there's nothing you can find from New
27 Zealand or even from here, because the sample sizes are too small to
28 differentiate them.
29
30 So I think we should be open to the possibility, and to the consideration that
31 different types of businesses may have different degrees of risk. There was a
32 time when transmission distribution in Australia had different betas as well. So I
33 think we should open to that possibility, to approach it with thinking what does
34 the theory, or what conceptual framework issues, what they might tell us about
35 that, and what does the evidence say.
36
37 Because I think the way the discussion ended, discussion paper, essentially
38 says well if you're regulated, you'll have the same kind of risk. But on that
39 principle, you would be saying that an iron ore railway in the Pilbara had the
40 same beta as an electricity distribution company in the metropolitan area on the
41 east coast. Or you'd be saying that an airport - not that airports are formally
42 regulated - but they would have the same beta as an electricity or gas
43 distribution company.
44
45 I think while we all understand that the regulatory framework influences risk,
46 and indeed influences systematic risk, I think it's much too oversimplifying to
47 suggest that we have a framework that equalises those risks for all businesses.

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1 Even if you just take the distinction between gas and electricity in this country.
2 The gas regulatory framework sets reference tariffs, but the reality is that most
3 gas piped to the transmission pipelines, yet no-one repays that reference tariff.
4 They're all paid on long term contracts that are set with regard to that reference
5 tariff, but we're rarely at it. And when you say that we have a regulatory
6 determination in gas, you don't have instantly all the tariffs adjusting in
7 response to that. It's a much more disconnected practice.
8
9 So I think, my core proposition is that we should be open to that possibility, and
10 have a process to give it due consideration, and the conclusions will be
11 whatever the evidence tells us.
12
13 DR MIRRLEES-BLACK: Other views?
14
15 ASSOC PROF PARTINGTON: Sorry, I was away. We're on the?
16
17 DR MIRRLEES-BLACK: We're talking about--
18
19 ASSOC PROF PARTINGTON: Materially different risks.
20
21 DR MIRRLEES-BLACK: There's different risks as between different
22 businesses, transmission distribution, gas, electricity.
23
24 ASSOC PROF PARTINGTON: I take the point, all the utilities are not the
25 same. They do have significant novel power and relatively low price elasticity,
26 so at least pretty similar revenue risks. Operating costs risks ..(not
27 transcribable).. quite different. So, yes, there could be differences in risk. Do I
28 think we've got any chance of reliably measuring that? No.
29 PROF JOHNSTONE: And a full description of this would involve the supposed
30 upside risk, in other words, the risk of something could happening. Gas versus
31 electricity, for example. You couldn't look, it would be one sided to look at only
32 the potential negatives that can affect the future cash flow of the organisation,
33 and to completely ignore and therefore bias the whole settings, by not allowing
34 for, equally like, in a symmetric situation, equally like the good things.
35
36 So for example, the fact that assets are optimised out of the asset base, that
37 takes away a lot of the things that we would think of as risk, and actually makes
38 the distribution of cash flows not symmetric.
39
40 ASSOC PROF PARTINGTON: Sorry, I should also clarify, I wasn't talking in
41 terms of cash flow adjustments particularly, I'm still back in--
42
43 DR MIRRLEES-BLACK: Beta. Stephen?
44
45 PROF GRAY: Just evidence, so if you can quite reasonably see that a gas
46 pipeline with a couple of mines at the end of it, might be in a different risk class
47 to a metropolitan electricity distribution network. It would be up to that gas

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1 pipeline to make the case and provide some evidence.
2 DR MIRRLEES-BLACK: So therefore we'll be discussing in session 2 whether
3 we can reliably measure that difference.
4
5 ASSOC PROF PARTINGTON: On UK regulators, I think they decided they
6 can't, put everything out.
7
8 MR SADEH: But what I see about any, let me show a few examples. Another
9 sector where I would see differences between betas, here's a difference
10 between a beta and alpha in the tolerance sector. If I had a cross city ring road,
11 where I had exposure to the whole city versus a new growth corridor, that's a
12 beta difference. If I had that same ring road that was in construction, that's an
13 alpha. Because that's something that I can control. I'll just talk about electricity,
14 I'm not qualified to have a view on the difference between gas and electricity.
15 But between transmission and distribution, there are differences in the
16 businesses themselves, but I don't think they need to translate into the rate of
17 return, because the overall regulatory framework puts them in a similar position
18 on risk. Where there are differences in the businesses, the way I think about it,
19 distribution is much closer to the customer, it's got more involved with
20 stakeholders, it's got a higher labour proportion that you require. It's got
21 additional services that need to be provided, like emergency services. They're
22 all things that are in the Opex allowance, to me.
23
24 There are different levels of unregulated opportunity between the two again, but
25 again that's not a regulated rate of return issue. So I don't think at the moment,
26 I'd support always checking through to see if there's any evidence, but my
27 intuition is that there shouldn't be a material difference between the two on
28 ROR.
29
30 MS CIFUENTES: Stephen, does that also address your point, where you were
31 saying that the gas pipeline with the two mines at the end is vastly different to
32 an urban electricity distribution company? The businesses need to bring that
33 out in their proposals. Would you expect to see that addressed more at the
34 Opex level, rather than rate of return?
35
36 PROF GRAY: Yes, so some aspects of it might be Opex differences. But there
37 may also be the point about income elasticity. That has a systematic
38 component to it, so there could be elements of both.
39
40 PROF JOHNSTONE: Correct me if I'm wrong, but if suppose the mines close
41 down, so that pipe's not used anymore. Does the revenue cap arrangements
42 still allow the money to come from elsewhere anyway?
43
44 MR HOUSTON: No. From who? Not in the gas situation.
45
46 What about in electricity?
47

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1 MS CIFUENTES: Is that what the?
2
3 MR HOUSTON: Perhaps. I don't think that such a situation exists.
4
5 PROF JOHNSTONE: That's a key point.
6
7 PROF GRAY: And that's the sort of evidence I'm talking about. That gas
8 pipeline with the two mines at the end.
9
10 DR MIRRLEES-BLACK: Investors. Investor confidence and risk. Are there
11 reflections on investor confidence and risk that should be influencing the
12 guidelines?
13
14 MR SADEH: As I've mentioned in my opening comments, I think investor
15 confidence is necessary for the long term interests of consumers. A lot of
16 people talk about the cost of funding, and that is true. I also talk about the
17 benefits to everybody of encouraging innovation. I don't think it needs to more
18 explicitly factored in, other than saying that therefore, I think that there should
19 be, in a way, a higher bar on looking to make any fundamental changes to
20 things, because there is a cost of investor confidence every time we make a
21 change to the framework. And that absolutely doesn't mean that we shouldn't
22 make changes, but it means that we should really be mindful of the downsides.
23
24 PROF JOHNSTONE: It's about investor confidence in user industries as well,
25 of course. So investors are more confident in the revenue earner, but less
26 confident in the revenue payer. That's the broader perspective.
27
28 DR MIRRLEES-BLACK: Any other points that others want to raise, on investor
29 confidence?
30
31 ASSOC PROF PARTINGTON: Well, I guess you have user discretion, right?
32 We talked about discretion earlier. And obviously it's exercised with care. But
33 where possible, the intention to use discretion should be signalled well in
34 advance, so people get the opportunity to adjust, as far in advance as possible.
35 It's self-evident, isn't it, that discretionary changes that involve large transfers of
36 wealth should be considered very carefully, whether it's a large transfer to the
37 businesses or a large transfer to the consumers.
38
39 DR MIRRLEES-BLACK: Any other questions on investors?
40
41 PROF GRAY: Just one point, which I'm sure we'll come to later. We've danced
42 around the trailing average cost of debt a little bit. I'm sure we'll come to that
43 more in the future. But just in terms of investor confidence. What if the
44 extraordinary situation would be, if we moved from rate on a day allowance, to
45 a trailing average allowance, with all of the pain over many years that that
46 involved, to then switch back to a rate on the day allowance at the first
47 opportunity.

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ASSOC PROF PARTINGTON: We've got the transition in, if you're going to change, you'd want the transition out.

MR HOUSTON: I think from an economic perspective, regulation is a repeated game. That's the very nerdy way of describing it, but regulation's a process that, decisions are repeated, we're talking about one more guideline that's already been, there will be others in the future. And essentially, we've got to remember that these are long term assets, we're having a repeat process about the remuneration of those assets, and most importantly, we actually need capital to keep coming into the centre, to provide for future investment. It's not like a timeline where we build it and then it sits there for 20 years, and we wait or hope that people will come.

Because some of the things that confront this sector, particularly the transition to renewables and the technology changes, are actually going to require - they may threaten the utilisation, if you like, of some assets, but they're also, sure as eggs, going to require a lot of investment in new assets, because energy will be coming from different places than what we're used to. And it's unlikely that it's not going to be needed to be provided over a network.

So the critical thing is to preserve stability and assurance that investors need to keep making those investments. However, I'm not saying, irrespective of the consequences for customers, but it's actually if investors stop coming, the customers are in more trouble than if they do come with the right rate of return. And so really, just providing that repeated process of avoiding dramatic changes that don't have a strong policy or financial foundation, is just very, very important.

PROF JOHNSTONE: Again, it's a bit of a one sided perspective. I'm taking your point, but investment strike notion is relative to gold plating, given that's the balance, isn't it. And if the regulated rate of return is highly attractive, the investments are queuing up.

MR SADEH: That's not how we see it. If the incentive mechanisms work better, I can actually prove to you mathematically why I prefer to use the incentive mechanism, than mathematically keep growing my RAB for the sake of it. That might have been historic wisdom by a lot of the networks, I take that, but with more institutional investment in the sector, there's a much more rigorous examination of what's the right thing to do from an investment point of view, and it isn't to overspend on the network.

And there's also a piece of regulatory management, that we want to make sure that we're doing the right thing by the nature of regulation, and it would be crazy if I just kept on building and building and building, and show that the incentive frameworks weren't working.

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1 So particularly in the low interest rate environment, the incentive to overspend
2 on Capex is quite small. You would rather work with the incentive rather that
3 just build.
4
5 DR MIRRLEES-BLACK: Any other questions on this? There is the issue which
6 is important we need to deal with in the remaining 15 minutes of this, and that is
7 the potential for the re-opening of the guideline. Because a binding guideline,
8 there would be provision for the AER to re-open. And obviously that puts a
9 context around it. And I think there's questions around under the circumstances
10 under which it should occur; if it does occur, what are the criteria for it to occur;
11 and should it, it comes back to previous questions on the judgment that needs
12 to be applied in doing so. Who has some thoughts on that?
13
14 ASSOC PROF PARTINGTON: Can I seek a point of clarification. Presumably
15 regulatory relief will still be available even under these guidelines. In other
16 words, if there's a problem in that you're regulating businesses, you'll be able to
17 do something, by accelerating the depreciation of loans, or is that out? For
18 example, let's think of a catastrophe, right? The Christchurch earthquake.
19 Clearly there's problems. What are we going to do? We stop with the
20 guidelines, so sad to do that.
21
22 MS CONBOY: I think that's part of what we're waiting to explore though, isn't
23 it?
24
25 MS CIFUENTES: We don't have all the available advisors in the room, to
26 advise us on any of those provisions, but I've got to say that did cross my mind,
27 whether there is such a material change to the circumstances of the
28 determination. Without having the legal team, we've got a quasi-legal expert at
29 the back, but I think that rather than divert the whole conversation into what do
30 the rules provide, in terms of those extraordinary circumstances, I think it's
31 more general re-opening, rather than the catastrophic event. I think framed in
32 the guideline itself, it would contemplate more a regular event, conditions
33 change, do you get another GFC for example, rather than something
34 completely catastrophic for one business. That was an attempt just to bring it
35 back.
36
37 MR COX: I would have thought, you would imagine that were there to be a
38 catastrophe, that something would happen. I mean, it's just the random world
39 ..(not transcribable).. I guess the question's whether they should be ..(not
40 transcribable)..
41
42 MS CIFUENTES: Isn't it a question of whether it's, if you've got a catastrophe
43 that involves one business, I don't know that that would necessarily mean
44 re-opening the rate of return guideline; so much as re-opening the
45 determination. So you would need a catastrophic event that would wipe,
46 essentially undermine the whole basis of the rate of return guideline. Another
47 GFC might actually fit that bill. But the difficulty of that, of course, is the GFC

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1 may actually take some time to unwind.
2
3 MR HOUSTON: I think we're talking about catastrophic or cataclysmic events
4 that go to the estimation of market parameters which underpin it, rather than to
5 the physical circumstances of any entity to which they are applied. We all know
6 that there could be circumstances in which the rate of return guideline that will
7 come out of this process may no longer work. It's easy to see that. It's quite a
8 challenge, I suspect, though, to write down all of the circumstances that might
9 give rise to that. We could perhaps write down some, but I doubt that we could
10 ever hope to catch them all, just by definition, as we don't know what could
11 happen.
12
13 But there are some, could be some sort of obvious indicators that there were
14 problems, I think. One would be that debt yields started to exceed the equity
15 allowance in the guidelines, I think that would be a pretty clear sign that there
16 was a problem. We have had times that were close to that, or like that, in the
17 past. Another example might be if the risk free rate fell below some measure of
18 inflation expectations, so that you had, effectively, negative forelooking risk free
19 rates. Negative real risk free rates, might be another sign. So they are market
20 based signals that, I think, would give cause for pause. But I'm not pretending
21 that I've got a full list, but then there's some examples.
22
23 Whether it's sensible to try and set out a positive list, which inevitably will be
24 incomplete, I think is a difficult question.
25
26 PROF JOHNSTONE: This relates very closely to the last discussions, because
27 it's basically saying, do you think of risks on suspicion, and rewards on
28 suspicion, or do you make ex post adjustments. So by re-opening a
29 determination. In some cases, obviously, the potential, for example, of some
30 terrorist thing or something, where the potential risk is so horrendous that
31 there's no way that you could grant a rate of return ex ante on the suspicion
32 that's going to happen one day. On the other hand, if it happened, well,
33 something not as dire as that, and clearly then a new determination would
34 make sense. And as Jim says, it would essentially happen of course, because
35 that's how things work.
36
37 MS CONBOY: Would that be to the rate of return guidelines, or would that be
38 to the actual determination itself?
39
40 PROF JOHNSTONE: The determination.
41
42 MR SADEH: Firstly, I agree with the distinction between the Opex allowance
43 and a broader determination, which can have specific elements to the broader
44 rate of return itself. I think we should be very circumspect about putting it in
45 general re-open, as anything. If you have any re-openers at all, they should be
46 very tightly defined, because this goes back to my concern about - no-one can
47 have it both ways. If the investor community wants certainty, it also needs to

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1 offer it back, in terms of accepting the decision for the period. That's why
2 there's always a needing to mesh the length of the regulatory period, if you've
3 got a trailing average, that that isn't exposing you to a single event at the time
4 that the determination's made. I think, when I look at the current mix, I think
5 well that probably says that you don't need many, if any, specific re-openers on
6 the rate of return. If you have a major GFC, you know, just ordinary course of
7 event cycles, even something a bit of out of cycle, well, as investors, I don't
8 think there's too much of an issue on the risk free rate. Because I'll have entry
9 year issues, but I can deal with my hedging properly at a trailing average to
10 take care of that. If I didn't have a trailing average, it would be a very different
11 situation.
12
13 PROF GRAY: I think there's a couple of just practical examples as well. So,
14 take the GFC example and I think the bottom line there is that you wouldn't
15 reopen the guideline lightly, that it would take an extreme type market event
16 such as a GFC with the kind of features that Greg was outlining. In addition to
17 that, I think there's a couple of practical things. One is, if the data that's being
18 used to mechanistically update parameters is no longer available. We almost
19 lost our data service providers for return on debt a number of years ago and it
20 wasn't that long ago that there was an inquiry about whether we should close
21 down the Government bond market, so that would be an example of just the
22 data, as strange as that seems now, but the data might not give up - and then
23 another example, just that's risen this week, is the opposition's policy in relation
24 to imputation credits that presumably makes the equity ownership method for
25 estimating gamma - apologise, for raising gamma like this. It's irrelevant.
26
27 MS CIFUENTES: Can I just take you back then to the GFC as an example?
28 As you recall, with the GFC, it unfolded over quite a period of time and it wasn't
29 immediately obvious, even to those of us that were in financial markets, at the
30 time, how it would actually play out. Does that - at what point then do you
31 reopen, or is it an ex post event that you then say, okay, well, we'll look at
32 your - the impact that it had when we do your next reset to see if it was
33 materially different for those reasons. Again, is it a reopening? You know, I'm
34 just conscious of the fact that there are some who would still argue that the
35 GFC was just part of the natural long-term cycle and in the wash up it probably
36 didn't have long-term implications. Now, I'm not suggesting that's my view, but
37 there is a view there. So, at what point would we have reopened, let's say, if
38 we have another GFC?
39
40 MR HOUSTON: I don't think this is necessarily going to be a helpful
41 contribution, but I think if you just cast - I was involved and around at the time of
42 the last GFC, and one example of that slow--
43
44 MS CIFUENTES: Slow go.
45
46 MR HOUSTON: Slow, sort of, revelation of what was happening was some
47 very dramatic changes downward in the risk-free rate, in a short space of time

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1 and for those that - not everyone may have been around, but that had very,
2 very dramatic impacts on the revenue termination process for the New South
3 Wales and ACT distribution businesses, all to do with the formulaic
4 arrangement that existed at the time, as applied to the period that he measured
5 the risk-free rate and the timing of that measurement period and those changes
6 made dramatic - had a dramatic impact on the revenue determinations of those
7 businesses and to my mind, that illustrates the difficulty with trying to do what it
8 seems you may be asked to do, which is to consign the measurement of some
9 market variables to a formula, because there can be highly disruptive periods
10 when there's very dramatic changes and I don't think that whether you're on
11 one side or the other side of that measurement - and I'm talking about sides in
12 terms of timing, you know, a month or two can make a big difference. I don't
13 think that leads to good policy or good regulatory decisions. Quite what that
14 means for the guideline, I think, is a very difficult question, but assuming we
15 don't have the legislative requirements that have been put on the table, I think
16 that would, to my mind, suggest that your guidelines should have some generic
17 clause that says, "You need to be able to exercise discretion to override a
18 formula that could be giving a very odd outcome" and that odd outcome could
19 be - it might be good for the customers, it might be bad for business, it could be
20 the other way around. We can't predict. That would be my personal view.
21 However, if we're in a world with the legislation as proposed, I think that risk is
22 one that, it seems, you've got a practicality in avoiding, in which case, you're
23 then confronted with the question of, well, given tumultuous times, can we - and
24 assuming we're not in the thick of making a determination which would be a
25 matter of luck - then what's the decision-making process to reopen the
26 guideline? Indeed, perhaps to ask the legislature, to say, this binding thing
27 actually doesn't work anymore. We need some - to wind it back again. That's
28 just a statement of a problem rather than a solution. I think the main thing I
29 would counsel is that we all sit here with eight or ten years of relatively stable
30 financial market conditions and think that we can address these issues for the
31 long-term, assuming that things won't change very much and history says that
32 that's an unwise assumption.
33
34 DR MIRRLEES-BLACK: I think the question is that even if it manifests itself,
35 because the Chair's point was that it's not necessarily easy to say these
36 conditions have now manifested themselves at the time and I think the question
37 is, you can say, well, there are some criteria, how can you actually measure
38 those criteria and write them down and make it so that it's not entirely
39 subjective?
40
41 PROF GRAY: I don't think you can. I think it's one of those things that you
42 know it when you see it.
43
44 MR HOUSTON: Yes. I don't think you can write it down in a precise way.
45
46 PROF GRAY: The example would be the GFC.
47

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1 MS CIFUENTES: Yes.
2
3 PROF GRAY: I think you've got to try to fix things straight away, because if you
4 take that scenario, so Lehman Brothers defaulted and then within a month the
5 government bond deal had gone from seven to four at the same time that the
6 BBB yields had gone to - well, we couldn't even measure the markets.
7
8 MS CIFUENTES: Yes.
9
10 PROF GRAY: It was off the top of the chart.
11
12 MS CIFUENTES: Yes.
13
14 PROF GRAY: Within a month and so the effect of prescribing fixed parameters
15 for transmissions businesses in particular was that, like, we know that this is a
16 price ..(not transcribable).. anyone who had a window could just look outside
17 and you see that there was a major financial crisis and yet the allowed return on
18 equity was - the cost of equity was assumed to be cheaper than at any time in
19 history. That's just nonsensical and it's - you know, it's one thing to say, well,
20 we're not sure how much we should be changing that, but to fix that lowest ever
21 allowed return on equity, in that circumstance, for the next five years and then
22 maybe do some sort of squaring up at the end of the day and I think you're then
23 getting to, like, intergenerational equity issues that - why is it that the square up
24 is going to be paid for - the cost here is going to be paid not by the customers
25 who were served in this period, but by the next generation of customers.
26
27 MS CIFUENTES: Yes.
28
29 MR SADEH: Do you think that's more an issue of profitability as opposed to the
30 cost of debt?
31
32 MR HOUSTON: No, the debt cost changed dramatically as well--
33
34 PROF GRAY: Well, they do, but--
35
36 MR HOUSTON: And this is--
37
38 PROF GRAY: But is your existing mechanism--
39
40 MR HOUSTON: If you have - this is one of the great benefits of the trailing
41 average cost of debt, but we're not going to mark the entire debt for follow
42 through at this very high - it's going to be one-tenth as we go through.
43
44 MS CIFUENTES: That's right.
45
46 MR SADEH: I've got some great old debt that priced at bananas and got new
47 debt and that's exactly what happens, you know, we don't suffer the full

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1 consequence either direction of - rates changing tomorrow doesn't mean our
2 debt prices have changed, just our marginal debt that we're issued.
3 PROF GRAY: It's not the wild swings in prices that customers have to bear as
4 well.
5
6 MR HOUSTON: That's all true, but it is also conceivable you could be
7 measuring - you could be looking for measures of the cost of debt at a time
8 when no sensible person would be raising debt, depending on how it is done,
9 so it's a good thing, the trailing average from this point of view, but it's not to
10 say that it's completely blemish free. At least, it's a possibility.
11
12 MR SADEH: No, look, the issue that you have that again, you know, from the
13 GFC, is markets can actually close. People ..(not transcribable).. happens,
14 but--
15
16 PROF GRAY: Exactly.
17
18 MR HOUSTON: Yes.
19
20 MR SADEH: When you're talking about these being some of the largest
21 businesses around in terms of their funding needs, you know, the impact of one
22 or two capital markets closing can be huge.
23
24 MS CIFUENTES: Can I ask just one threshold question, and given it's close to
25 lunch it can be dismissed very quickly, the threshold question, should it be the
26 AER that makes the decision about the reopener? Well then, how about
27 COAG's EC?
28
29 ASSOC PROF PARTINGTON: It's on the fixed framework, so you can give
30 them the decision.
31
32 MS CIFUENTES: Well, think through that, though.
33
34 MR COX: Of course, the danger is then you get a political solution, not an
35 economic one.
36
37 MS CIFUENTES: Thank you.
38
39 MR COX: It may not be within our power to give it to them.
40
41 PROF GRAY: Imagine if there was a financial crisis in an election year, you
42 know, and you had done that.
43
44 MR SADEH: I think that's why--
45
46 MS CIFUENTES: Except again, you would need the agreement of the whole of
47 COAG EC. Think about it. It's not an attempt by the AER to unlist itself of

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1 responsibility, but to the extent that I can see that how will the approach be
2 made? Would it be just an approach by one business? Would it have to be an
3 agreement by all the businesses? There are some practical issues there,
4 notwithstanding even whether we have an opener, a reopener, or not.
5
6 MR HOUSTON: I mean, you could be a victim of some very unfortunate timing
7 in this kind of setting. I mean, this is a possibility, so I think you need to give
8 some thought to the process and ensure that it's not a lengthy one, because
9 you could find yourself in a situation where you had weeks or even less to make
10 these kinds of decisions and I'm not sure the COAG EC process is up for that.
11
12 DR MIRRLEES-BLACK: Well, it sounds like there's quite a lot of agreement,
13 though, about what's been said here. I mean, one, probably they should be
14 reopener. Second, the circumstances of it are difficult to describe, but - and
15 judgment is going to have to be applied when it's done, but there should be a
16 high bar so that it's not applied lightly.
17
18 MR HOUSTON: Because I think it should be applied to scenarios, whether
19 they're - if you can't define them that's one thing. Should it be a general
20 reopener? We just feel like there should be some definite points around--
21
22 DR MIRRLEES-BLACK: No. Exactly.
23
24 MR HOUSTON: --data unavailability, or you know, when you get to the point of
25 then it's called a GFC and then the question is how do you define it? Well, at
26 the moment, effectively, political or governments of the day define when
27 insurance of this happens.
28
29 DR MIRRLEES-BLACK: Yes.
30
31 MR HOUSTON: So, we could have something similar to that, I guess.
32
33 PROF GRAY: I think the guideline maybe doesn't write down a formula that's
34 to be applied, but maybe provides some examples of the sorts of things that
35 would lead to a reopener.
36
37 ASSOC PROF PARTINGTON: And the sort of criteria that needs to be--
38
39 MS CIFUENTES: And the process for it.
40
41 MR HOUSTON: I think the process should be avoided because as I
42 understand it, there's an obligation to update the guideline, but that involves
43 meeting with - having this kind of process. It tends to be very lengthy, so when
44 people are talking about we need to get an outcome in that situation very
45 quickly, so it wouldn't be making a whole new guideline. It would be some kind
46 of pressing amendment, I think is what you - so the processes are very
47 important. It's not just a rerun the six to 12 months.

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1
2 DR MIRRLEES-BLACK: Well, it may be that you can click in - that you have a
3 guideline which you press a button and it clicks a new process within the
4 guideline, if that's feasible and that counts as being mechanistic, and you would
5 think--
6
7 MR COX: One thing to think about is the information asymmetry here, because
8 I can imagine businesses liking and that we had what we have and it's about
9 things move against them, but maybe less keen to do so in their favour. So, I
10 think that needs to be, you know, sort of--
11
12 PROF JOHNSTONE: Very good. I think we have some agreement--
13
14 DR MIRRLEES-BLACK: Can I just say one thing? It would be lovely to
15 understand better what a GFC would do to the cash flow situation of the
16 entities. Someone was talking about the fact that his interest rises are pretty
17 immune, at least in the short-term, because they're deals that are done. I know
18 that a drop in the risk-free rate would lead to the tariff formula of reduction in
19 income, but we talked about it from the perspective of investors in the entity
20 rather than the entity itself and the regulator's concerned with the entity, the
21 cash flows to the entity, not to the fortunes of investors in the entity. I think we
22 can tend to mix those up. We take the perspective of investors in the entity as
23 if that should be our focus, when in fact, the regulator should be focussing on
24 the entity itself and its fortunes.
25
26 MR SADEH: Let's take a financial market crisis as opposed to, say, a labour
27 crisis as something that could add other impacts and start with the existing
28 revenue cap premise, so, you know, effectively there might be changes in
29 demand. Obviously, that might not directly impact in terms of the way a CFO
30 will think about what is going to happen? It's not going to be as, you know,
31 flippant as I made it sound and obviously, that's what I'm doing here. Of
32 course, it will do something, but it won't flow through one to one, so the first
33 thing they'll think about is in terms of are there any binary impacts? Are
34 markets going to close and is that going to impact my refinancing? Second
35 thing, am I going to have a material impact on my costs? Now, that might be a
36 tenth, you know, one-tenth of my capital structure, it might be more, but then I'll
37 think about that. Then they'll start thinking about if interest rates go up
38 generally, what happens to me? I start to come against my ratio covenants with
39 the credit rating agencies and the bank, because if one for one, your cost and
40 your revenue goes up, your interest cover falls. So, you start to think about,
41 you know, is there any pressure on my short-term delivery? That would be the
42 thought process that they'll give it.
43
44 PROF JOHNSTONE: That makes a lot of sense to me and again, that's
45 focussed on the entity itself rather than on investors' perspective of the entity.
46
47 MR SADEH: Yeah, that's right and then the company will be bringing it up to

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1 the board.
2
3 PROF JOHNSTONE: It's what's in our bank account inside the entity, basically.
4 MR SADEH: Yes. Yes. It'll be focussed on their credit rating will be number 1
5 from the financial point of view.
6
7 PROF JOHNSTONE: Which affects then, in turn - I mean, if you pay a higher
8 interest rate we've got to protect the entity itself. So, I understand what you're
9 saying and I think that that kind of focuses again back to reality, back to cash
10 flows in and out of a regulated entity.
11
12 DR MIRRLEES-BLACK: Okay. We've covered off quite a lot of risk material.
13
14 MR SADEH: Sorry, can I just mention one thing? I'm talking from a, you know,
15 from an institutional and a private investor perspective. One legitimate voice
16 that hasn't been spoken about is government owned entities who, by nature,
17 don't have - they just don't have external debt. Now, I know we're talking about
18 a benchmark efficient entity, but I don't know whether it's worth considering
19 from their perspective a, you know, a material event, because that would just
20 crater their revenue and nothing else happens on the other side to, you know--
21
22 MS CIFUENTES: We'll take that one on notice, because it goes to the
23 benchmark efficient entity, the characteristics of ownership traditionally hasn't
24 been a relevant factor.
25
26 MR SADEH: Which I understand. Yes.
27
28 DR MIRRLEES-BLACK: Good. Thanks very much. We'll break now. We
29 reconvene at 1.45. Thank you.
30
31 **LUNCHEON ADJOURNMENT**
32
33 So this afternoon we have one hour on gearing and then we will move on to
34 other issues. So for this afternoon session I would like to ask Martin Lally to
35 start off giving a short statement which will throw open the discussion.
36
37 DR LALLY: Thank you very much. I am very pleased to be here and
38 congratulations to the AER for running a process like this and so by the other
39 places including by the commission of New Zealand that I think it has a good
40 effect. That brings me to I guess about one minute and 40 seconds so there's a
41 collection of apparently disparate issues here in the gearing section. But I think
42 that as with any issue to do with cost accounting or regulation generally, one
43 should try to resolve questions by going back to the fundamental principle in
44 NVP to zero which I am very pleased to hear Graham will seek to take pride of
45 place to. So you will hear more from me later on on that question trying to
46 resolve some of these issues about how we would and so forth by going back
47 to that NVP to zero commission of New Zealand. So it is capable of resolving

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1 many of these issues.
2
3 MR HOUSTON: I'm sorry, I'm happy to wait until we get to the substance.
4 DR MIRRLEES-BLACK: Thanks very much. There's a number of questions
5 that we have got in the gearing session section and I think you can split them
6 into two. There's questions one might say of the methodology or philosophy of
7 methodology in substance and then there's questions of the detailed and
8 measurement. So I suggest that we start with the principal ones and the first of
9 these is the question of what gearing measure shall we be looking at and for
10 what purposes. So I will throw that question--
11
12 DR LALLY: I'm happy to start on that and then others can contribute if they
13 wish. So we want gearing in for two purposes. One is to de-gear and then
14 regear various amounts and secondly re-gearing for the WACC formula.
15 Neither of these formulas, the WACC formula or the gearing, regearing formula,
16 they don't propound at the start. They are derived and if you want to know how
17 a parameter within a formula is defined, you look at the derivation and the
18 derivation should be complicit and when you look at these derivations for
19 de-gearing and regearing formulas in WACC definition, it is very, very clear
20 from the derivations that we are talking about market values for equity and debt
21 formulas.
22
23 DR MIRRLEES-BLACK: Anyone?
24
25 PROF JOHNSTONE: This is the kind of thing I was saying before how we can
26 quite easily get into a safety string because we go to great lengths to worry
27 about how to measure these, for example, the market values of debt and
28 equity. But the trouble is again it is a circular consideration because they are
29 determined by the regulator's own decisions. So the regulator can't look at the
30 market value of debt and equity and say okay that is an independent - that is an
31 exogenous consideration for us to take into account when we are regulating
32 because rather that is at least largely a consequence of previous regulatory
33 decisions. That is where the frustration for me in this kind of drawn out
34 argument comes from.
35
36 PROF GRAY: So that's an estimation question. You don't disagree then
37 conceptually it must be a market value?
38
39 PROF JOHNSTONE: Yes but the problem is the value market doesn't exist. It
40 is an independent consideration that the regulator doesn't affect. The regulator
41 actually affects that market value.
42
43 DR LALLY: I don't dispute that but just let us suppose that the terms for
44 whatever reason have decided on market gearing of 50%, I made that up. Debt
45 being $10 million and equity being $10 million, and the regulator comes along
46 and does something which changes the value of equity. The equity value
47 instead of being 10 million it is now 12 million. The debt value is still 10 million.

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1 So you would be saying well the value of ratio has changed; that's all true but
2 that's not where the game ends. If firms having experienced this regulatory
3 action which pushes up the value of equity from 10 to 12 million and therefore
4 raises or rather reduces the leverage ratio, firms will presumable say to
5 themselves well what leverage ratio do I like? I still like 50% so they would then
6 make an adjustment so that they bring it back to the 50% they desire. So
7 notwithstanding the fact that regulators do affect the market values of debt and
8 equity, firms can still override them and presumable they do.
9
10 PROF JOHNSTONE: Sure and that goes on forever as the dog chases its tail
11 round and round and where the game settles is going to be almost an accident
12 and there's logging from both sides and the question then is whether that is a
13 good outcome.
14
15 DR LALLY: But I don't think that's a dog chasing its tail. Let's say the regulator
16 does something that causes the firm's equity value to go from 10 to 12 million
17 and as a result its leverage declines and firms then say, we would still like 50%.
18 So to do that they borrow some money and pay it back to equity holders to
19 rebalance the 50. Surely the regulator isn't going to go, I don't like that, we are
20 going to do something to push up their equity value. Again that doesn't--
21
22 PROF JOHNSTONE: But the regulator will react. So each is reacting to the
23 others decisions basically and the question is where does that settle?
24
25 DR LALLY: It seems to be there's only two casts to it. The regulator does
26 something not with the intention of changing the leverage, that is just an
27 accidental by-product. The firm then cleans it up by doing what it wants to,
28 surely that's the end of it.
29
30 PROF JOHNSTONE: That changes the firm's settings which then changes the
31 way the regulator looks at the firm so the regulator in this repeated game can
32 adapt again. So maybe it runs out of changes, it might iterate down to nothing,
33 but the question is where does it iterate down to?
34
35 MR SADEH: I'll give my thoughts earlier in the day on gearing. Things like
36 capital structure as opposed to the cost of finance tend to be stickier and I think
37 the first gate is to say what implied credit rating level do you think a benchmark
38 efficient entity should be? Once you come up to that what should the gearing
39 ratio be now. It is hard to find independent pure measures of market gearing,
40 but if you look at different kinds of measures you will find things that cross
41 check against each other. You have got quite a few averages of a few things
42 that lead to 57%, some that lead to something close to that. It all tells you that
43 you are quite close knowing that my information isn't going to be efficient for the
44 same reasons that you both mentioned about why there's an iteration fact - an
45 iteration loop on debt and it's true. As we know that looking at the equity comps
46 there's also things that distort the market gearing in terms of the way that equity
47 moves.

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1
2 So I go back to my point to say that if you have got something that is working
3 and is close and makes sense, then for a longer term measure like gearing I
4 don't think we should be looking at changes because individual calculations
5 change rapidly. I think it's more a cross check in this instance.
6
7 DR MIRRLEES-BLACK: And I think that the question or the question on paper
8 is what is the gearing that should be used, and there's gearing which should be
9 used to make an estimate of the cost of capital. And then it addresses the
10 question of what is the gearing number you use for ..(not transcribable).. betas
11 ..(not transcribable).. calculate the cost of equity; and secondly, is what gearing
12 level are you applying in order to calculate the actual cash flows for the
13 revenue? And in terms of the responses I had, there is not much disagreement
14 about whether - the values in the market measure of gearing for the estimation
15 of the WACC. David, do you disagree with that?
16
17 PROF JOHNSTONE: Are you saying that the sensitivity of the WACC to the
18 gearing adjustment as is proposed in it's different form is not great?
19
20 DR MIRRLEES-BLACK: No, I'm not saying that. I'm saying that it may be true.
21 What I am saying is that in order to estimate the weight of average cost of
22 capital, one should use the market level of gearing make that estimation.
23
24 PROF JOHNSTONE: Using market values are you saying?
25
26 DR MIRRLEES-BLACK: Yes.
27
28 PROF JOHNSTONE: Yes well that's where I find it to be the unsatisfying
29 aspect because of this circularity that I keep on raising.
30
31 DR MIRRLEES-BLACK: What should we use instead?
32
33 PROF JOHNSTONE: Again that's a copout question because maybe the
34 answer to that would be, well, you use good judgment and you think about what
35 the consequences of what you have done before are, you think about it in
36 fundamental terms. You don't just jump to some mechanical solution because it
37 is there and available.
38
39 PROF GRAY: But at the end of the day the AER would have to write down a
40 number.
41
42 PROF JOHNSTONE: Sure.
43
44 PROF GRAY: But what number do you think they should write down? How
45 should they go about that task?
46
47 PROF JOHNSTONE: That's the question for today, right? That's what we are

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1 here for so--
2
3 PROF GRAY: Let me suggest what they should do, what they should look at?
4 So in the 2013 guidelines, the AER looked at a whole bunch of comparative
5 businesses and concluded that a market value of 60% was appropriate. They
6 looked at five year averages and 10 year averages and both were very, very
7 close to 60% and they have now redone that analysis, the total three of a
8 hearing from the Court and nothing has changed. In fact the two numbers have
9 got closer to 60%, both of them. The five year average and the 10 year
10 average costs 1, 2, 3, 4, 5 different comparative businesses. So even if there is
11 some kind of feedback loop that is going on, it seems like the iterate market
12 value terms and at that 60% is a very stable estimate. And so my suggestion is
13 that that's what the AER should do and it's the number it should be.
14
15 DR LALLY: Could I mention to you that if you look at that table, certainly if you
16 take the findings in your averages they are 57 and 63 as you say. But if we
17 shorten it like we do now, if you take a three year average it is down to 54%
18 and then if you take just the last year it is 52. So the question of what value you
19 should choose for this parameter, it would seem, to be sensitive to the historical
20 period that you are going to use.
21
22 PROF GRAY: Yes. I think the answer to that is something that Ilan told us
23 earlier, there can be accidental changes to market value gearing. So every
24 time a share price goes up or down, the market value gearing will change, and
25 it will take some time for the firm to rebalance and catch up if you like. So that's
26 why I think for this parameter, particularly it is appropriate to look at some
27 averages and not by a particular snapshot point in time because that could lead
28 to astray.
29
30 DR LALLY: Indeed but the question is which historical period for you?
31
32 PROF GRAY: Well I think in this case the fact that we look at five, we look at
33 10 and we were getting the same number and that was the same with what
34 happened in 2013. That gives a fairly degree of confidence that that's pretty
35 robust and stable figure.
36
37 MR SADEH: I think the gearing that comes out of a market calculation is much
38 at risk because of the fluctuation of the equity value than the value of debt as
39 opposed to dire observations on the things like cost of debt. There's risk free
40 rates and observable debt instruments, you know, are a pretty clean source of
41 data. There's a lot of extraneous things happening in the gearing count which
42 is - while you would say number 1 it is a - people are not willing to change their
43 capital debt structure every day so you take a long term average if you did.
44 And even when you do, if the number comes out at 61% I don't think that
45 means that you should use a number of 61%. I think that means that justifies
46 the existing position of 60.
47

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1 PROF JOHNSTONE: It might be practical as meaning - Martin has mentioned
2 daily period changes things. I think changes in the market value of equity
3 changes things. So there's clearly an arguable range at least and so within that
4 range, if I was a regulator I wouldn't be using some methodological criteria into
5 line picking this one or that one because I just don't think there is any clear
6 answer to that. So then you would have to go back to what is the judgmental
7 outcome? As a matter of judgment, what is the effect on the tariff scheme on
8 the WACC? And then that opens up a much bigger perspective than a narrow
9 technical one that three months is better than three years or whatever,
10 whatever the methodological arbitrary approach is of those that could be taken.
11
12 PROF GRAY: What would be involved in the application of the judgment as
13 you understand?
14
15 PROF JOHNSTONE: Common sense for one thing, not just mechanically
16 adopting some methodology because it's been done before and the numbers
17 are written on a piece of paper before. It has to be prospectively applied and
18 consideration given to the weaknesses of the methodology and now one of
19 those, I think, Ilan's said was true, equity values are up and down, they are
20 driven by the regulator. The regulator is watching themselves when they are
21 looking at the equity values effectively. They are watching the effects of their
22 own decisions. So if you get hung up on that number and plug it into a debt
23 equity formula, then you're kidding yourself in terms of precision. This is this
24 fake position that we talked about before.
25
26 DR LALLY: Can I offer a purely statistical way of resolving the question of
27 which historical period to use? When you come up with this number, 60 or
28 whatever, you are applying it for a regulatory control period. You are applying it
29 for X years into the future and for argument's sake, let's just suppose that X
30 years into the future is five years. So you are trying to predict the value, the
31 average value for a time series into the future and what we do know about this
32 time series is that it has been reverted and what you could do is choose the
33 historical period to predict averagely which over the next five years that gives
34 the best predictor of the future, so a purely statistical exercise. So the question
35 of which historical period to use could be resolved in a purely statistical fashion.
36
37 PROF JOHNSTONE: But just by one criterion that is not the be all end all way
38 to do it. It is one - it's potentially plausible but you can't lay that down as if, no,
39 this is the answer.
40
41 DR LALLY: But if you accept the premise that what we are trying to do for
42 regulatory purposes here is to predict the average leverage over the next say
43 five years, if you accept that premise then surely it follows you should choose
44 the historical period for estimation that provides the best predictor.
45
46 DR MIRRLEES-BLACK: I have a question which you may be about to answer
47 but my question is are you trying to do that, or are you trying to calculate what

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1 the gearing is of the benchmark efficient entity and if that's what you're trying to
2 do, then it is not forecast - you are not trying to forecast average gearing, you're
3 trying to estimate what is the optimal gearing for this--
4 DR LALLY: You are trying to estimate optimal gearing but you - as a proxy for
5 optimal you take an average over some comparatist. And if that's what you're
6 doing then you've moved from optimal, you've deferred to the data on the
7 question of optimal, okay, you're not trying to decide for yourself what optimal
8 is, you're going to defer to what firms actually do.
9
10 DR MIRRLEES-BLACK: Yeah.
11
12 DR LALLY: As a proxy for optimal and if you're deferring to what firms actually
13 do then what you want is a predictor of average gearing over the next five years
14 and therefore you've used an historical period that provides the best predictor.
15
16 MR HOUSTON: I'm not sure that it is. You're not making one prediction for
17 one set of five years, there setting changes and guidelines that have been
18 applied and multiple determinations over the next four years. But there's not a
19 precise period that we're trying to predict and it doesn't seem to me that we
20 even want a precise predictor for any one of those periods. Surely as a matter
21 of practicality it's likely that the optimal gearing is not actually a precise number
22 because although we know it's efficient for companies to have leverage and we
23 know that, you know 100% or 99% leverage is not efficient and we know that
24 0% leverage is not efficient. It's quite probable that there's a fairly broad range
25 of values around some midpoint area where it doesn't make much difference to
26 the cost of capital for a benchmark entity.
27
28 I think it's also clear that any observation of gearing, it's a fact that we can
29 observe, will not be stable even if there is an optimal single point because
30 realities of debt raising and realities of business's capital, programs, ebbing and
31 flowing will mean that an optimally financed business it's measured gearing will
32 vary from one year to the next. So I don't see the kind of changes or the
33 differences that we observe in this table as having any meaning whatsoever
34 other than that they are in the same ballpark that we thought they were in last
35 time. So I think your very prescription in saying we're trying to get some precise
36 predictor based on a statistical series is a bit misplaced. We're actually trying to
37 arrive at a number that - there's certainly quite a range of numbers that would
38 be correct or not incorrect and really not much is to be gained by squabbling
39 over whether it's 60% or maybe it's 55% or maybe it's 65% depending on how
40 the series fluctuates. It seems to be that there's a pretty clear message out
41 here that this is a pretty stable variable.
42
43 The perhaps change as we see in the last recent times are quite explicable by
44 reference to what we're seeing broadly in equity market values changing.
45 Nothing to do with regulatory framework by the way. So I think this is actually a
46 pretty simple question that deserves a very simple decision.
47

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1 PROF GRAY: I think picking up on one of Graham's points from earlier, maybe
2 have regard to the incentives of whoever is making a submission. So the ENA I
3 know in their submission proposed just leaving that number at 60%. If the AER
4 applies the same process that it did in the 2013 guideline and leverage
5 increases the allowed return goes up.
6
7 DR LALLY: In fact what one can do is take the definition of whack put into it the
8 CAPM formula for the cost of equity and into the CAPM formula for the cost of
9 equity you have the equity. And into the CAPM formula for the cost of equity
10 you have the equity beta and you stick into that the AER's preferred formula
11 and when you run that through the mathematics you will find that there is a
12 relationship between that and the level of debt and it's not flat.
13
14 MR HOUSTON: Well that's a creation of the formula rather than a depiction of
15 financial theory so we need to be careful about being misled by that
16 phenomenon.
17
18 DR LALLY: But if we are going to use a particular model for the cost of equity
19 and use a particular de-gearing formula we surely should take some notice of
20 what the logical consequences of that are for the relationship between whack
21 and leverage and it's not flat. If it were flat then I would agree with you Greg a
22 different scenario but if it isn't flat it can make a difference.
23
24 PROF GRAY: But that's kind of more reason to stick with a hitherto well
25 accepted 60%. Because otherwise, taking account of the slope of that mind
26 you might be receiving opportunistic--
27
28 MR SADEH: That's right, the whack isn't constant because gearing and cost of
29 equity and cost of debt offset each other there ..(not transcribable).. it goes
30 back to an investor perspective about confidence, if there isn't a significantly
31 better outcome by looking at a different data or a different methodology then
32 why change. So when I think about cost of financing that is more observable.
33 Hearing measures on market value, that makes sense but they are still clouded
34 by a number of issues I think people have mentioned before. The nature of
35 unregulated, the amount of unregulated revenue in the business and that is a
36 bigger piece of Australian networks than overseas networks, that's just the way
37 that our regime's done when it comes to putting in new connections.
38
39 So I think from a dependability point of view it is much easier to defend the data
40 set that you're using for cost of funds but not for a hearing measure which is
41 why I personally would advocate to have it as a cross-check rather than an
42 absolute formulae application.
43
44 DR MIRRLEES-BLACK: Can I raise a question which may add to the debate?
45 What are the appropriate comparators in this set. We're down to three and
46 we're just using listed entities and whether it's using market value gearing which
47 requires you to have a listing in order to calculate. But what do you as a group

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1 think are the appropriate comparators to gearing?
2
3 DR LALLY: Well I agree with the AER's definition which it applies informally to
4 the credit regime and to leverage that it's a pure flag regulator energy business
5 in Australia. That seems like a pretty good decommission of the comparative.
6
7 DR MIRRLEES-BLACK: And what if that became an empty set?
8
9 DR LALLY: Well we're not at that point. I think a better question would be
10 given that we're at three is that now too small a number and should we expand
11 the definition to give us a larger number? I think that's the right question. If we
12 ever do get to any ..(not transcribable).. we'll have to face that question but we
13 don't need to so why ask a question that we don't yet need to answer?
14
15 MR SADEH: Gearing ratios can tend to be the hardest things to observe
16 because there are different ways of measuring here and you know a lot of
17 people do things like a debt to EBITDA which has no meaning in a regulated
18 asset. When it comes to debt to a market type value and equity value it is very
19 hard to get data from unlisted networks which are the majority of the networks.
20 The book value of equity makes good sense, particularly over time. And these
21 unlisted valuations aren't published, I have no idea what my peers' equity
22 values actually would be so I'd have no idea about what their actual gearing
23 would be. It is reasonable and going to be pretty accurate to look at the
24 existing list of comparators and look through any adjustments you need to
25 make so you're looking at their effective underlying asset gearings.
26
27 You don't get confused by any whole co debt or any shareholder loans that they
28 have. If you can look at that and you look at is their average rating compared
29 with the intended benchmark efficient energy rating that you want to get and
30 then you'll see that cross-check measures like debt to RAB that you can look
31 will tend to be pretty similar. Now debt to RAB itself is not the right measure but
32 as I said because they'll tend to cluster you can equate the list of gearing to be
33 pretty close. It's just again another reason that it's a cross-check you shouldn't
34 rely on it scientifically.
35
36 DR MIRRLEES-BLACK: So in summary we're saying that AER should only
37 look at gearing measured against market values. But you're saying there is
38 some information in debt as a precaution of regulatory asset base? It will--
39
40 MR SADEH: The thing is they have really simple cross-check to the debt to
41 market value that's come out because debt to RAB by itself is a meaningless
42 measure of gearing. It gets things quite wrong when you look between assets.
43 I would love for there to be more observable points of debt to total market value
44 but it's impossible to get them from different unlisted investors. We can go
45 through the reasons that debt to RAB is misleading because unregulated
46 revenue is only a secondary point for that, again the fact is the value of the
47 regulated business is not simply RAB it's also an operating component to

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1 business.
2
3 The rating agencies take that into account because rating agencies don't just
4 look at debt to RAB, they can't look at debt to CAPM because they can't find it.
5 They look at debt to RAB but they say that's one measure and I'll look at other
6 measures across the cash flow capacity of the company ..(not transcribable)..
7 and other things like that. So to look at debt to RAB can be quite misleading
8 particularly when you get into really high or really low interest rate
9 environments.
10
11 DR MIRRLEES-BLACK: But in applying the formula to calculate revenues to
12 AER is using debt to RAB because when you're calculating revenues you're
13 saying your revenue is cost of debt x gearing x RAB and then--
14
15 MR SADEH: Well it's because it's applied as a rate of return on the regulated
16 asset base.
17
18 DR MIRRLEES-BLACK: So implicitly there's a relationship between gearing
19 and - gearing used in the market value, because that's what's been measured,
20 and then gearing used in order to determine a return. So you've got use of
21 gearing using the same gearing number but used for different purposes, so
22 you'd--
23
24 MR SADEH: Well they're not the same number. There will tend to be a
25 correlation between the two but the debt to RAB percentage is higher than the
26 gearing percentage. Why is that? There's gearing capacity bought out of the
27 rest of the rest of the regulated cash flows that aren't a function of the rate of
28 return function.
29
30 DR MIRRLEES-BLACK: Yeah, but the gearing of the market level is used as a
31 proxy then to apply to calculate the revenues. So therefore implicitly the
32 regulator is making the assumption that the RAB gearing is the same as the
33 market gearing.
34
35 MR SADEH: Yes.
36
37 DR MIRRLEES-BLACK: So therefore wouldn't it therefore be the case that
38 gearing as a percentage of RAB provides some information about gearing that
39 could be used to help the AER to work out what an appropriate level of gearing
40 is?
41
42 MR SADEH: Not to say that that is the level of gearing.
43
44 DR MIRRLEES-BLACK: Exactly. Not to say that it is the level but to say that
45 there is information contained in that which can be used to inform decisions
46 about what gearing is.
47

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1 MR SADEH: Let me give you an example. If there were only one listed
2 comparable level and it had market gearing of X and its debt to RAB was
3 completely out of sync with all the unlisted observations that you could get from
4 Moody's then you would say that gearing's not reflective of the rest of the
5 market. But if it's debt to RAB is quite similar to all the other ones that you want
6 for that benchmark rating level then that would tell you that the market gearing
7 coming out of that observation is probably reasonable.
8
9 DR MIRRLEES-BLACK: My question is does market - and I think you said yes
10 to this but with a nuance. My question was does debt to RAB provide any
11 information to help AER work out gearing? I think you said it contains some
12 information, as long as you don't say it's the same it contains some information.
13 But I'd be interested to hear the views of others, does debt to RAB contain any
14 information which is useful in order to estimate gearing? In particular in a
15 regime where we don't have many comparators.
16
17 PROF GRAY: I think we're making work for ourselves. I know what you're
18 saying but I think we're making work for ourselves. Like relative to data and
19 market whispering I think table 3 here is the slam-dunk of 60% in order.
20
21 DR LALLY: So long as you're happy with the methodology that's used to
22 generate those numbers. Such as how--
23
24 PROF GRAY: Which I am. Which I am.
25
26 PROF JOHNSTONE: But now after all this discussion you could hardly say
27 there's a slam-dunk anywhere, I mean it's been so far off a slam-dunk like that--
28
29 DR MIRRLEES-BLACK: But I think there is concurrent around 4 that 60% is
30 there. So David--
31
32 PROF JOHNSTONE: I think the account is that there's an arguable range--
33
34 DR MIRRLEES-BLACK: Yeah.
35
36 MR SADEH: I just want to be clear. ..(not transcribable).. doesn't want there to
37 be pragmatism and judgment around this number. I believe there should
38 absolutely be a fixed number because I have less faith in the objectivity of the
39 data sources around them, which I think cross-check to the number of 60%. I
40 mean, I've looked at different measures for myself, whether they be transaction
41 comparables, which have comparatively issues around level of unregulated
42 debt. I've looked at various gearing ratios and they all point to 60%.
43
44 DR MIRRLEES-BLACK: Do you have any questions?
45
46 MS CIFUENTES: No, but I think David's point goes to - and I don't want to be
47 putting words in your mouth, David, but I think what you're saying is you're all

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1 asking the wrong question in a sense.
2
3 PROF JOHNSTONE: I get that impression a lot in this kind of discussion. I
4 think it's really easy not to see the wood for the trees in this kind of thing. I
5 mean, for example, when you're talking about gearing ratios being measured
6 against RAB or against market value, we've already seen that there's market
7 multiples that are rather quite large, so these numbers are quite different and
8 could change the gearing ratio a lot, depending on which methodology you
9 chose. So there's a lot of pragmatism called for because there's no clarity
10 about what is the right answer and, again, that comes back to the fact that
11 these entities don't exist exogenously out in the market. We don't just look out
12 the window and look at them; instead we actually govern them.
13
14 PROF GRAY: So would RAB multiples be used to inform the estimate of
15 gearing?
16
17 PROF JOHNSTONE: I'd be very distrustful of RAB because RAB is this
18 made-up number. You know, it's got replacement costs in it from the old
19 assets, it's got whatever counting vagaries are involved and, again, once an
20 asset is invested in, it goes into RAB at whatever cost, so that's, potentially, a
21 blank cheque and, therefore, not a number that you should give any objectivity
22 to.
23
24 MR HOUSTON: David, what I don't really get is what would be - you know, if
25 we gave you the task and you came back--
26
27 PROF JOHNSTONE: But it's not my task; it's the regulator's task.
28
29 MR HOUSTON: What would you give us?
30
31 MS CIFUENTES: It is our task, but that's what we've got you here for too as
32 well to help us with that, I think you've told us what to avoid. So what would you
33 offer as--
34
35 PROF JOHNSTONE: But you're looking for an easy solution and I don't think
36 you're going to find one.
37
38 MS CIFUENTES: If I was looking for an easy solution, I wouldn't be in this job,
39 but--
40
41 PROF JOHNSTONE: But you're asking me for an easy solution. You're saying
42 "Okay, what is it?".
43
44 MR COX: I guess my question is what are we all missing here? You know,
45 things we can agree about. There's an underlying agreement. Have we
46 missed something that hasn't been articulated?
47

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1 PROF JOHNSTONE: You're suggesting that it's a done deal and all I'm saying
2 is that the level of discussion and this limit about methodology suggests that
3 even amongst those people who agree, they don't really agree in full.
4 MR SADEH: I certainly don't see myself as disagreeing with other people on
5 methodology. I think I'm trying to point out, you know, issues and limitations
6 with each different form of data source which suggests to me that clustering
7 around a sensible outcome rather than an exact calculation for this, given all
8 the limitations, is sensible.
9
10 PROF JOHNSTONE: I think I'm saying the same thing. A sensible outcome
11 might be - the question is what is that?
12
13 MR HOUSTON: Well, I think at least quite a few people here are saying 60%
14 looking at this table, we're all comfortable with the method by which these
15 observations are being derived, which is a market value measure, and we're all
16 comfortable with the sort of direction or value to which they seem to be pointing
17 and that, I think, seems to be what many of us is saying is a sensible outcome.
18 So I'm very happy to hear what an alternative sensible outcome would look like,
19 but at the moment I'm completely confused as to what you're suggesting that
20 would be.
21
22 PROF JOHNSTONE: You're saying it's a matter of vote and I'm saying it's a
23 matter of regulatory judgment. That's what it comes down to.
24
25 MR HOUSTON: But where does regulatory judgment takes us? I mean, I'm
26 happy to hear about a different method, but I don't get what that is and where it
27 ends up.
28
29 PROF JOHNSTONE: Well, we've seen - we've heard enough methods to know
30 that there is a range already. So there's regulatory judgment even within that
31 range let alone outside that range.
32
33 MR COX: We're all here to have you articulate it if you can help us.
34
35 PROF JOHNSTONE: Okay, so if it was me, I would work through the
36 consequences because I don't think there's going to be an answer that I can
37 just plug in as the right answer. So work through the consequences and then
38 work back and think about the upshot, and so that's a bit of judgment to-ing and
39 fro-ing. You know, you're saying that you've got a number and you're asking
40 me for a number. I would never say there is a number. You've got a favourite
41 number.
42
43 MR COX: If we can just go back, I think one of the things Martin said was that
44 the rate return varies with the level of gearing. In what way does it vary and
45 how do you think that might be relevant today?
46
47 DR LALLY: As I mentioned, if you take WACC, stick in the formula for the cost

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1 of equity, enter that and stick in the AER's formula for the equity beta, what you
2 get is the weighted average cost of capital is equal to the unlimited cost of
3 capital, minus a term which reflects the tax advantage of leverage. So you're
4 subtracting something, the tax advantage of debt, and then you add on a term
5 which reflects the debt risk premium. So it depends upon the relative sizes of
6 this debt risk premium term and the tax deduction on debt, whether the
7 relationship between WACC and gearing is declining or increasing.
8
9 The implications of that are because it's probably not flat, if the relationship
10 were flat, we could just stop, it wouldn't matter. We wouldn't even need to
11 think. You would just take the unlimited cost of capital, but because it's not flat
12 or probably not flat, then it's going to matter to the allowed costs of capital,
13 whether you choose a gearing of 60% or 55. That's going push up or reduce
14 the allowed revenues for regulated businesses. Of course, that's money, so
15 that matters.
16
17 DR MIRRLEES-BLACK: In that formula, how would you relate the debt
18 premium to the gearing because, of course, there is a relationship there and
19 when one is making estimates, one keeps the debt premium static because
20 you're keeping your credit rating assumptions constant, so it's okay for an
21 estimation, but if you're making a judgment as to where it should be based on,
22 whether it's increasing with gearing or decreasing can gearing, how would you
23 do that?
24
25 DR LALLY: Okay. The relationship, clearly, is positive. The high was
26 leveraged, the high was the premium. How do you come up with an estimate of
27 that? Well, empirically I would say. I mean, we can look at a range of firms at
28 the same credit rating and we can see differences of leverage, differences in
29 their first premium, so empirically you would get an estimate.
30
31 PROF JOHNSTONE: Which, of course, is the incentive for the arguments at
32 the top end of the range and why other parties would argue at the bottom end
33 of the range.
34
35 DR MIRRLEES-BLACK: And then there's also a question as to how material is
36 the difference within the reasonable range within which we're operating, and
37 whether the additional value that you can get justifies the additional complexity
38 in terms of the calculation.
39
40 PROF JOHNSTONE: Yes. It may very well be that these two are fixed, which
41 appear in the formula, pretty much wash out, and if they do, it strengthens the
42 point for not spending too much time on this, but if they don't wash out and the
43 difference is substantial, it argues for spending more time thinking about this
44 question.
45
46 PROF GRAY: If it's upward sloping, a business would receive more revenues if
47 the number went up, but the businesses, in fact, submit in favour of leaving

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1 where it is. I think that's telling as well.
2
3 MR SADEH: I mean, that's one thing. I mean, irrespective of the gearing that's
4 notionally told to someone, they will always take into account you've got
5 multi-million dollar networks that need to keep certainly investment grade
6 ratings otherwise they can't issue enough debt in the market to cover those, or
7 any agencies clustered around about where should that level of gearing be. So
8 there's a level of prudency within the networks themselves that would say
9 irrespective of what allowance you ever gave us, if you didn't give us enough,
10 we still would have to pay more if that meant getting the right get away because
11 we just have to.
12
13 MR HOUSTON: May I, perhaps, try and put a slightly - I think not inconsistent
14 explanation on that given by Martin, but for those that are thinking of doing
15 some evening reading on this, I would recommend, actually, that you - it's about
16 ten or 15 pages in the New Zealand High Court's discussion of the so-called
17 leverage anomaly in the CAPM and from the appeal that was lodged or made in
18 New Zealand in relation to the commerce submissions, input methodologies
19 first decision back in 2009 and the appeal was a year or two later, it's a very
20 clear discussion of some of the issues here, and I'm going to try and distil very
21 quickly.
22
23 The essence of it is that the CAPM model is a model about equity returns as it
24 relates to systematic risk to everything, not just the equity market, and that
25 means that debt will always share to some extent a degree of systematic risk,
26 and that properly done is captured in the roll of a debt beta in the CAPM
27 formula. The problem with that is it is very hard to estimate empirically what a
28 debt beta is because there are other reasons that the debt risk premium
29 catches other affects and debt. So it's practically a very difficult thing to
30 measure.
31
32 As a consequence, the formula you've got here has no debt beta in this. The
33 consequence, though, is if you within that formula start switching for different
34 proportions of debt and equity, you change the weighted average cost of capital
35 that the formula gives you, even though the financial fairy would say that across
36 a reasonably broad range, let's say, not scientifically, 20%, you wouldn't expect
37 the costs and capital to change within a reasonable range of gearing levels, but
38 because we put aside the work that debtors normally do, which is capturing a
39 little bit of systematic risk, the consequence of the formula is that when you
40 change gearing you get a different WACC.
41
42 That's all written up very clearly in that judgment in sort of plain English terms,
43 and I think that's really what we're talking about.
44
45 In consequence for gearing, the most important thing is that you adopt - if you
46 adopt a gearing estimate in your formula that's in the same ballpark at the
47 observations you're using to reach your benchmark gearing level and also for

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1 your beta estimation level, and that has its own re-levering process, then you
2 should be fine, but I think what that anomaly of the formula should tell you is
3 that you would be cautious about changing the gearing assumption you use
4 without good sort of long-term structural reasoning for doing so because you
5 will change the cost of capital, up and down, depending on which way you were
6 going, that results, for reasons that are not fundamentally justifiable, but coming
7 back to this absence of a debt beta.
8
9 So I don't know if that's helpful, but if I haven't.
10
11 PROF GRAY: The AER would only had to do that night-time reading if they
12 were minded to change.
13
14 MR HOUSTON: Correct.
15
16 MR SADEH: We can confirm--
17
18 MS CIFUENTES: We do have an open mind on all these matters, as you
19 know, Stephen.
20
21 DR LALLY: There's an additional point here. David has referred to the
22 circularity that results from the actions the regulator and whilst I don't see that
23 as a problem here, because it is rapidly extinguished through our repetitive
24 process, there is another circularity that is involved here and that is let us just
25 suppose for argument's sake to emphasise the point, supposing the true WACC
26 is flat with leverage, so it doesn't make any difference what leverage a firm
27 adopts, its WACC is the same, but because of the way the AER defines WACC,
28 it uses the CAPM and it uses a particular gearing formula, supposing the effect
29 of that were that the WACC estimated by the AER went up with leverage.
30
31 Now, if we were in that kind of world, where true WACC is flat with leverage but
32 the AER's formula shows it going upwards, we would expect that regulated
33 businesses would crank up their leverage, knowing it wouldn't hurt their WACC,
34 but it would get them more revenue. And, these firms, by cranking up their
35 leverage, would then be presenting the very market numbers that would be
36 going in to the formula.
37
38 So, whilst the AER might think we are exogenously getting these leverage
39 numbers from somewhere and running them into a formula and it all looks
40 kosher, they have, in fact, been gained by the regulated firms, because the
41 regulated firms manipulated their leverage knowing that this was going on.
42 Now, I'm not saying that this is true. I'm not saying true WACC is flat. I'm not
43 saying that in the AER's formula, it goes up. But, I'm just identifying the
44 possibility that the AER might be being gamed in this area.
45
46 DR MIRRLEES-BLACK: Have you got any other issues on this area that you
47 want to cover? There's one issue which - there are some issues of detailed

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1 measurement which we could cover, or we could just deal in the paper
2 afterwards. But, there is an issue on the re-leveraging of companies with the
3 actual calculation for re-leveraging which there's a couple of people who want
4 to make comments on. Stephen, do you want to?
5
6 PROF GRAY: What - yeah. Start with that. So, the AER's current approach is
7 to recognise that prior ranking debt finance does, other things equal, increase
8 the risk to residual equity offers. And so, I think that point is not at all
9 controversial. That's standard results in all the textbooks and it even accords
10 with common sense. The more debt holders you have lined up in front of the
11 prior ranking claim, other things equal, the equity - the risk of the residual equity
12 holders increases.
13
14 So, there are two questions that need to be resolved. One is what formula is
15 going to be used to do the unlevering and re-levering, because we need to
16 produce equity betas on a like with like basis at 60% gearing. And so, I'll deal
17 with that question first. So, there are a number of different formulas that you
18 will see in the literature for that step of unlevering and re-levering.
19
20 One of those formulas, the Miles Ezzell formula, is appropriate for the case
21 where you've got a constant proportion of debt finance, which is what we have
22 here and what's built into the PTRM. So, the fact that there are other formulas
23 that will deal with managing other debt management policies - the constant
24 amount of debt, for example - that's all irrelevant. I think there is one formula
25 mathematically that applies with a constant proportion of debt finance so that's--
26
27 DR LALLY: But, why didn't the debt betas treated as zero?
28
29 PROF GRAY: Well, no. I'm coming to that. That's my second point, right? So,
30 the formula itself - and that formula has a debt beta in it. And so, that formula, I
31 think there's no question that that's the one that must be used. So, there's no, I
32 think, real debate about that. Within that formula, there's a debt beta, right,
33 which would need to be theoretically included. Market practice is very much to
34 use a debt beta of zero, and that's the approach that the AER's always adopted
35 so far.
36
37 So, the question is, if the debt beta is higher than that - say, .1 for example, if
38 that's the debt beta - what difference would that make? So, some papers that
39 Graham and co-authors have written in the past have indicated that that will
40 have some effect on the results and that the AER would need to take into
41 account the fact that they're using a debt beta of zero; maybe it should be .1 or
42 something of that nature.
43
44 So, I think the appropriate approach then for a regulator is to actually quantify
45 what difference would it make, if I did do unlevering and re-levering with the
46 beta of .1, would that make a material difference? So, I've run some numbers
47 and maybe we can include a little table in the joint report showing that it makes

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1 way less difference than the estimation error, on beta. So, if you include a debt
2 beta of .1 or .15 or something, we're talking about changing the second decimal
3 point in our beta estimates, by not much.
4 And so, it's well within the standard errors of the standard errors of ..(not
5 transcribable).. so, you know, we need more, I think, in this process than to say
6 this could be an issue and therefore let's not re-lever. I think if there are things
7 that could be an issue, let's try to quantify them and determine is it - (a) is it an
8 issue; and (b) is it a very big issue. And, that should be an approach adopted
9 on general.
10
11 DR LALLY: I agree with that, and I would add that debt beta estimates as high
12 as .15 are far too high. The true values, in my view, are much lower, but that
13 simply emphasises the point Stephen's making that it doesn't make very much
14 difference at the end.
15
16 PROF JOHNSTONE: Yeah. I think the point of sensitivity analysis to all these
17 things is really valid and you know, we need to establish what the range of end
18 consequences is and then think about it hard.
19
20 DR MIRRLEES-BLACK: We're agreed on that then.
21
22 PROF JOHNSTONE: That's quicker than I thought.
23
24 DR MIRRLEES-BLACK: That's good. Do you want to spend time on the
25 details of this beta estimation, or are you happy for that to be dealt with in the
26 joint paper?
27
28 MS CIFUENTES: I'm happy for it to be dealt with in the joint paper.
29
30 MS CONBOY: As am I.
31
32 DR MIRRLEES-BLACK: We'll do it that way then. Thank you.
33
34 MS CIFUENTES: Just if I can, this is more a broader question. So, we've been
35 talking about the sensitivity analysis, and materiality was one of the points that I
36 raised in the introduction; if we could consider some more materiality of this.
37 So, if we do that with all of the variables, at what point do you, sort of, optimise
38 it? And, I think this is going back to David's point; what is the optimal solution?
39 Because, if you look at all the variables and the ranges - and yes, we can do
40 sensitivity analysis, but it's almost like in funds management where you sort of,
41 try and optimise a portfolio, there are so many variables. So, do you have any
42 thoughts on that process and how meaningful it would be?
43
44 PROF JOHNSTONE: Well, to me, that process is actually just getting into
45 the - into the ball park, and admitting that we're not going to know where we
46 are - when we're at the right spot in the ball park. And so, that's why the
47 question from you at the start of the day about judgment rearing its head is

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1 inevitable.
2
3 MS CIFUENTES: So, with the--
4 PROF JOHNSTONE: And, the luck with these decisions don't last for
5 absolutely ever.
6
7 PROF GRAY: The New Zealand Commerce Commission has a formal process
8 for determining how a judgment is exercised. So, they take into account the
9 distribution, if you like, of each parameter and how that aggregates up to an
10 uncertainty about the WACC and then they adopt an allowed return, and I think
11 it's now at the 67th percentile, on the basis that - the judgment should be
12 applied on the basis that setting the number too low produces a more severe
13 outcome than setting the number too high. So, it's an institutionalised way of
14 balancing those risks. I'm just saying, that's a way that the regulators have
15 applied this.
16
17 DR LALLY: Right. But, I think the point of discussion here was the merits of
18 looking at the sensitivity of various parameters, and undisputedly, MRP is a big
19 one, beta's a big one, whether to include debt betas is way down the bottom.
20 So, that's one issue. A quite separate issue is that what the Commerce
21 Commission is doing, it's - unlike the AER, which just comes to its best estimate
22 of WACC - what the Commerce Commission is doing is coming to - it
23 recognises that whatever estimate you come to for WACC, it could be wrong;
24 the true number could be less than that or more than that, and it calculatedly
25 errs on the high side to give some protection against estimation error.
26
27 Now, that additional step the Commerce Commission is going through has no
28 counterpart to what the AER is doing, and it may just be that the AER deals
29 with the same issue by being more generous with its estimates of individual
30 parameters.
31
32 MS CIFUENTES: Sorry, if I can just get that clear in my mind. So, the New
33 Zealand Commerce Commission, its estimate is typically conservative?
34
35 DR LALLY: It's on the high side.
36
37 MS CIFUENTES: It's on the high side?
38
39 DR LALLY: Yes.
40
41 MS CIFUENTES: So, how did the consumer groups in New Zealand deal with
42 that?
43
44 DR LALLY: Well, naturally, they weren't very happy about it. But, I would say
45 to them that if you are a consumer, the worst fear that you have in this area is
46 not that your power bill is going to be a little bit high, but that the true WACC
47 has been accidentally underestimated and therefore, the regulated businesses

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1 lose interest in investing and then the network runs down and then your lights
2 don't go on one night. And, as a consumer, that is likely to be the bigger fear.
3
4 MS CIFUENTES: So, it was focusing on the--
5
6 PROF JOHNSTONE: But, it's a long way from--
7
8 MS CIFUENTES: Sorry. If I can just - so it was focusing more on the longer
9 term interests of the consumers and the NZCC was able to convey that to the
10 satisfaction of consumers?
11
12 DR LALLY: That's a matter that I can't answer. I mean, the average consumer
13 in New Zealand, a person like me, doesn't really have any input into this
14 process. The kind of industry body may or may not be reflective of the views of
15 the average consumer. I'm simply giving you my own perspective as a
16 consumer of electricity in New Zealand. I don't mind paying a little bit extra to
17 give my protection against the possibility of the lights going out.
18
19 PROF JOHNSTONE: And, the opposite risk to the one I was talking about is
20 the risk of one paying a lot for electricity for a long time to come, in perpetuity,
21 effectively. And I mean, if there is a risk that the investors will lose interest and
22 the infrastructure won't be built at the speed or based that the speed it should
23 be, then that doesn't happen overnight. And, you know, that's the whole idea of
24 these ..(not transcribable).. to actually correct for such a thing if it were to
25 happen.
26
27 I mean, I think a lot of people in the outside world would say that the greater
28 risk at the moment is that the settings have been too generous and that the
29 users are actually the ones that are actually got the long term pain. And, that's
30 not - they can't reverse that.
31
32 MR COX: Could I just go back to Stephen's talking about having, sort of,
33 uncertainty bounds or whatever around each parameter? If I understand that
34 correctly, then you sort of move up from that and look at the joint distribution
35 and all the other parameters. What issues are involved in actually setting
36 bands around parameters to indicate the range of uncertainty?
37
38 PROF GRAY: Well, maybe Martin would be better placed to answer that. He's
39 advising the New Zealand Commerce Commission on--
40
41 MR COX: Yes, and how would you aggregate up to get a joint distribution?
42
43 DR LALLY: If you take an individual parameter such as beta, if you run a
44 regression exercise, what comes out of that exercise is a point estimate of beta,
45 but it's a statistical exercise. What you also get coming out of it is a standard
46 error of the estimate. So, that gives you a standard deviation of distribution.
47

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1 To aggregate up, there is a convenient property that estimation errors in these
2 parameters are essentially uncorrelated. If your beta estimate is too high based
3 on running your regression over the last five or ten years, it's probably not
4 correlated much with an MRP estimate that has been generated using a
5 hundred and something years of data. So, if you don't have correlation, then
6 the laws of mathematics will enable you to generate the standard deviation for
7 the WACC distribution from the standard deviations of the individual
8 components, and that is the way it was done in the Commerce Commission.
9
10 MR COX: When you get into MRP, it seems to a bit more judgmental. It's not
11 quite as simple as beta, which is a comparable estimation.
12
13 DR LALLY: Well, what will happen with the MRP is that if you estimate that
14 using the last 120 years of data, just as with beta, you get a point estimate and
15 you get a standard deviation. But, what complicates it is that typically,
16 regulators will arrive at an MRP estimate by looking at a range of different
17 estimation movements. So, what the Commission did was, it said well we've
18 arrived at our MRP estimate by putting, let us say, equal weight on each of five
19 methods. And, by the laws of mathematics, you can then figure out, from the
20 standard errors on the individual estimates, what the standard error would be
21 on an equally weighted average of those five.
22
23 UNIDENTIFIED SPEAKER: So, semi-independence of something.
24
25 PROF JOHNSTONE: Again, it's all based on data items, so it pseudoscience
26 to an extent because as we know it's not like data coming out of a stationary
27 physical system. And if you go back a lot of years we're looking at the world
28 altogether. If we've only got a short period of data we've got a lot of noise in
29 our results. So we've got this appearance of rigour when in fact, I think, social
30 sciences generally just haven't got that - so that's what I find to be quite
31 threatening. The over-trust in statistical estimates in these changing social
32 context. The maths is good, but it's garbage in/garbage out. That's the
33 problem.
34
35 DR LALLY: I think you've got a choice though - in this area. If you don't go
36 through the kind of formal process that the Commerce Commission has gone
37 through, you are still left with the inconvenient fact that if you underestimate
38 your wack it's potentially a bigger problem, even for consumers, than if you
39 overestimate them. And the underestimation fear is that businesses won't
40 invest the minute it runs down. So given that a symmetry there's two ways of
41 dealing with it. One is the former process that the Commerce Commission has
42 gone through, and the other way of dealing with it - which isn't formal, or
43 explicit, but presumably goes on, is to be a little bit more generous in respect of
44 each individual parameter. But without realising what the cumulative effect of
45 all those little bits of generosity are in various places. So the people who do it
46 with a little bit of generosity on beta, and a little bit of generosity on MRP may
47 not realise what the aggregate effect of all those generosities is. Whereas at

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1 least the Commerce Commission knows what - or at least has a sense on what
2 the aggregate situation is.
3
4 PROF JOHNSTONE: That's an extremely good point. I think they compound
5 on one another, because they're more applicative.
6
7 DR LALLY: Yes.
8
9 PROF JOHNSTONE: And I think that's why you've got to work right through to
10 the end result of all the different settings, and then come back and reconsider
11 them.
12
13 DR MIRRLEES-BLACK: I think it's something - I mean, this wasn't actually part
14 of the topic, but I think it's something that we should - we can make some
15 comment on in the joint paper, and if you would find it valuable, discuss it which
16 would mean we can add a little bit of nuance to it in the next session - if that's
17 helpful. Any other questions on this now appearing for.
18
19 MS CIFUENTES: No, I thought you said gearing was going to be
20 straightforward topic. And we're not hearing from Professor Partington.
21
22 DR LALLY: Administratively Jonathan, once we move off gearing, does
23 Graham then come back into the chair? Yes? All right.
24
25 DR MIRRLEES-BLACK: Thank you very much Martin. Now, while Martin is
26 moving and being replaced by Graham Partington - this next session - for the
27 next half hour - it's about - the beginning of financial performance measures.
28 So we're dealing with a couple of issues before afternoon tea, and then we'll be
29 discussing RAB problems and that's firstly after afternoon tea. So now I'd like
30 to invite David to kick-off the discussion - it's about two questions: one is what
31 allows us ex post to think that we may have achieved the National - the
32 National gas objective; do profitability measure tell us anything - or what can
33 they tell us, about whether we've achieved those objections, or what in fact they
34 have on the need to return guidelines?
35
36 PROF JOHNSTONE: I'll just make two quick points. I think ex post it would be
37 a very good thing for the AER to do a cash flow analysis of these businesses to
38 actually understand exactly what's happened - money in/money out - to get
39 down to fundamentals and to understand their futures, it's really good to
40 understand their past, I would think? And then secondly, the fact of market
41 multiples being greater than one is a worrying sign, I would think, and it will take
42 a lot of explanation - especially when they're significantly greater than
43 one - that's got to be a symptom of a very attractive asset in that the market is
44 prepared to pay greater than the theoretical value of a different aspect of the
45 business, by that much money. Now, as a measure of financial performance,
46 and potential, there's got to be a lot in that - the market's speaking.
47

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1 DR MIRRLEES-BLACK: And in terms of this next half hour, one of the issues is
2 profitability measures, and I know the AER has done work on profitability
3 measures. In part it's reported on in the papers which have submitted to us.
4 There's been other work which is third party, but also reported in November of
5 last, which was published. But I think the question for the group is, "What do
6 those reports on profitability measures tell us about rate of return? Do they
7 form a role in it? That's the question that we have been asked to address
8 ourselves to in this financial performance session. So I don't know if anyone
9 would like to talk to that?
10
11 ASSOC PROF PARTINGTON: So we're on the historical profitability now, is
12 that right - is that what we've got to?
13
14 DR MIRRLEES-BLACK: Yes.
15
16 ASSOC PROF PARTINGTON: Well, profit and cash flow of course can be very
17 different, and I endorse David's view, and I would expect the AER was already
18 looking at cash flows. You know, I mean, what's the - what's the free cash flow
19 from all that? Can you disaggregate it to that level, or can you only get free
20 cash flow from the firm? I'm thinking regulators; and I'm thinking probably the
21 way they do their accounting - you can get the free cash flow. While we're on
22 accounting measures I'm going to cheat a little and make a comment about
23 gearing, because it hasn't been mentioned. But as from 1 January next year,
24 gearing, based on book values, will go up. It will go up because there is a new
25 accounting standard on leasing, which is effective from that date. And what
26 that will mean is nearly all leases previously - all those leases that were
27 operating leases, will be capitalised as debt. That will affect the accounting for
28 debt; it will affect the assets; it will affect the interest. So that's probably
29 something you should take on board and think about how that might feed into
30 the regulatory process. David Tedder -he used to be the chair of the
31 International Accounting Standards Board - Sir David - who's a very funny
32 man - he has a great line - he says, "Before I die one of my great ambitions is to
33 fly in an airline that is actually in an aircraft that is actually on the airline's
34 balance sheet." And as from next year his ambition will be realised. I'm sorry I
35 diverged off on that track, but I actually think it could turn out to be rather
36 important.
37
38 DR MIRRLEES-BLACK: So, cash flow - yes, obviously you should look at cash
39 flow, and ideally the free cash flow from the RAB. Can you link profitability to
40 cost of capital? Well, there are techniques that claim to do that. One of them is
41 EVA - economic value added. You know - is it easy to do? No, it's not - not to
42 get right. But the idea is that is close to measuring economic rates - what it's
43 effectively doing is measuring the surplus cash flows that give rise to a positive
44 or negative NPV. Or you might want to look at residual link, and valuation
45 models. They are also based on accounting data, and relate discount rates;
46 accounting profits, and value. Now, will that be easy? No. But in the process
47 you will probably discover some use of the facts.

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1
2 PROF JOHNSTONE: All those models claim you have got to plug-in a required
3 return on capital?
4 ASSOC PROF PARTINGTON: Or you can back it out. If you've got the value,
5 and you've got the profit numbers, you can back it - that's what implied cost of
6 the capital is.
7
8 PROF JOHNSTONE: Yes. You got the value of the regulated business
9 though - you've got the value of the whole entity. So, you know, in some
10 cases--
11
12 ASSOC PROF PARTINGTON: Yes, you can only do that with the local value.
13
14 PROF JOHNSTONE: Yes, I mean again, I think all these things just come to
15 the same - and that is that, you know, that the power and precision of these
16 finance tools is not as good as it looks in the books. That's what it comes down
17 to.
18 MR SADEH: This is a different measure from my perspective, and there are
19 naturally clouding issues around the data - we're attempting to work though
20 that. Assume for a second that you could get perfectly comparable finance
21 ability, and profitability data. The question is, "Should you be using it at the rate
22 of return?" I think it would be - I'd find it bewildering to be able to tell you.
23 Because to me the whole premise again - this is why I referred to the
24 benchmark efficient entity concept all the time. We talked about the separation
25 of systematic risk being in the rate of return, and the systematic risk being in the
26 cash flows. If you then look back ex post you're effectively cannibalising on the
27 separate risks that were taken by the network in the Opex allowances, and then
28 making them give them back after they've taken the risk through the rate of the
29 return. To me that's circular.
30
31 MR HOUSTON: Yes, I sort of echo that. I think it's totally fine for regulators to
32 want to record the ex post cash flows, and the earnings that businesses have
33 achieved, at least the ones to the extent are being regulated - part of them. But
34 I'm struggling to see any role that the - however complicated or after whatever
35 working through of that - any measure you may derive as to the ex post returns
36 that were earned. I'm really struggling to see how that is in any way informative
37 of the question before, which is--
38
39 PROF JOHNSTONE: Surely--
40
41 MR HOUSTON: Just a minute David. Which is the question before - which is,
42 "What is the rate of return that investors require?" Forward looking to provide
43 capital to these businesses, which we, I think agreed, earlier was a market
44 based variable - both as to equity and to debt - with all their measurement, sort
45 of, challenges. And the one thing that ex posts profitability, or cash flow
46 analysis, is not, is a market variable. It's a consequence of the difference
47 between what you thought was going to happen, and what did happen. So if

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1 you went through that process and you found that the rate of return properly
2 calculated - assuming no regard to the financing structure identity - because
3 that shouldn't be a part of this process - if you found that the rate of return was
4 X and X was bigger, or smaller, or had some - whatever relation it was to the
5 rate of return that you have set for the relevant period when you went back
6 historically and did that, what you would be measuring is, presumably,
7 out-performance, of the regulatory benchmarks. So that tells you something
8 about your regulatory benchmarks, and it tells you something about the
9 out-workings of the incentive systems as to capital; as to operating costs; as to
10 service target performance - all of those wonderful things we have now to
11 encourage businesses to do what we want them to do. But I think it would still
12 tell you nothing about whether the rate of return that you set five years ago
13 when - or previously set for the five year looking forward period, was the right
14 one, or the wrong one. It cannot intrinsically provide you with insight into that
15 information.
16
17 PROF JOHNSTONE: You said something that was music to my ears there,
18 which was "forward looking", right? But then at the same time you're going to
19 arguing for a backwards looking cost of debt, right? So that itself is internally
20 consistent. With regard to, you know - did we get more or less than the
21 required return? Well, you know, there may be all sorts of reasons for that - it
22 may agree - it doesn't necessarily mean that the previous return was too high,
23 or too low, but it might help inform judgments about whether or not the point
24 that Martin makes, that you adopted perhaps generous parameters in your
25 costs of capital estimation process whether in fact they do need to be quite so
26 generous? And if, for example, one were to find that the regulated utilities were
27 consistently earning rates of return above the benchmark, then Martin's
28 idea - well, you need to set a high benchmark so that they are incentivised to
29 invest enough - well, that wouldn't seem to be such a strong case, would it?
30 Because the fact they are generating these high returns would suggest that it's
31 actually in their interests?
32
33 MR HOUSTON: Could I - I just want to pick apart that Graham, because
34 if - we're in 2018 - let's just say, a hypothetical business with the impact? In
35 2012 we made a decision on that business's revenue, and we'd - let's just say
36 we thought the cost of capital, without a rate of return at that time, were
37 estimated to be 10% back then? We set their revenues for five years on that
38 10% along with a set of cash flows forecast in the PTRM. We then go back
39 now and we look at the five years that prevailed for and we find out that they
40 earned 12% say, I struggle to find any way I could use the existence of that
41 12% to tell me whether the 10% that I set at that time was a good number or a
42 bad number or even if they earned 8% I still wouldn't know whether my 10%
43 decision was a good decision and that's my difficulty--
44
45 PROF JOHNSTONE: ..(not transcribable)..
46
47 MR HOUSTON: We know that they earned something different to what we

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1 expected but that's intrinsic to the capital markets. So I'm struggling to just see
2 how your actually gaining any information about what the cost of capital was at
3 the time that you set that figure.
4 PROF JOHNSTONE: Well you're not gaining necessarily any information about
5 what the extant cost to capital was back then but you're certainly gaining a lot of
6 information about the financial performances being achieved by these
7 organisations which is obviously a relevant consideration to the regulator in
8 determining whether settings have been too generous or not. I mean where
9 else would you look other than the past cash performance if you wanted an
10 indication of what settings were like?
11
12 MR HOUSTON: Well like I agree with that but for one qualification, the settings
13 you would be evaluating are not the costs of capital settings but the other
14 settings that it was applied to before you take into account the prospect of
15 outperformance; because we're talking here about how to estimate the rate of
16 return and if someone earns more than the rate of return we have no way of
17 knowing whether that was because - all we know is that they earned more than
18 the rate of return. We still don't know whether the rate of return we set out
19 applying was the right one. That's the question.
20
21 PROF JOHNSTONE: No you're pulling our leg. I mean it's obvious if
22 someone's earning particularly say far more than you would have expected the
23 indications are that the settings that generated that--
24 MR HOUSTON: But what settings?
25
26 PROF JOHNSTONE: The regulatory settings of the time--
27
28 MR HOUSTON: Is the rate of return setting wrong?
29
30 PROF JOHNSTONE: Well the whole regulatory framework, everything, the
31 RAB, the WACC, the whole thing. So that's what generated that financial
32 performance, if there's money dripping off the walls where's it coming from and
33 why? It's an obvious thing to do.
34
35 PROF GRAY: Just sort of pragmatically what would you do with this
36 information if you were minded to have a regard to it?
37
38 MS CIFUENTES: Just before we get to that because that's assuming
39 something about the veracity of the information, if I can just ask Greg, would it
40 make any difference and I take your point on an individual business basis,
41 would it make any difference if we were looking at trends across all the
42 businesses? So for example all the businesses were over or under performing
43 in their actual relative to the allowed rate of return?
44
45 MR HOUSTON: I don't - as I understand it the relevant question we're here to
46 discuss today is how best to estimate the rate of return which was going to be
47 one input into a thing called regulatory settings. And a question is is that a

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1 good estimate of a market, which I think we agree is a market base variable at
2 the time it is made and I can't for the life of me see how any ex-post analysis,
3 no matter what it shows, will tell us whether or not that was a good estimate at
4 the time it was made. It might - it would - it may tell us about other things in the
5 regulatory framework and it's not a thing the task of this session to engage
6 across all those other things except I will indulge just for a minute and that is to
7 say--
8
9 MS CIFUENTES: Will you just perhaps just address that question of whether it
10 does make a difference if it's across the whole industry or not?
11
12 MR HOUSTON: Well I don't think it - I think I have addressed it saying I don't
13 see how it can make a difference or provide any or apparent - I'll see you say
14 make a difference, how it provides useful information to the question which is
15 relevant for this which is is the rate of return we're trying to derive a good
16 estimate of the costs of capital for these businesses. It may be it's quite normal
17 actually in the regulatory sphere for businesses to outperform and that's indeed
18 why we have incentive programs and one of the properties of a not red
19 regulations you need to because we don't have an - the normal market basis
20 seems to be efficient we set up incentive schemes and on average we expect
21 them to respond and earn above the costs of the ..(not transcribable).. or above
22 the allowed return through those incentive schemes. So I don't see in general
23 and this is quite consistent with the literature that businesses that are regulated
24 earning on average above the rate of return is something that should be
25 troubling. There may be questions about on average whether they should be
26 earning how much above but they are all questions of going to non-rate of
27 return parameters of the regulatory scheme. They're not questions that go to
28 the rate of return and whether at the time was it good assessment of the
29 question that arose at that time.
30
31 PROF JOHNSTONE: It's a question of what it means for right now. You know
32 if there is money dripping off the walls that's a pretty interesting consideration
33 when it comes to current settings. Forget about whether the past settings were
34 right or wrong, you can't change that, but certainly the consequences are very
35 revealing. I mean it verges on ludicrous to suggest that you wouldn't look at
36 past financial performance of regulated entities to give you indication of how to
37 regulate them in the future. ..(not transcribable)..--
38
39 MR SADEH: I--
40
41 MS CIFUENTES: Sorry I did interrupt Stephen. Apologies.
42
43 PROF GRAY: I was just going to bring us back to pragmatically what more do
44 you do with that information if you were minded to have regard to it. So I don't
45 think we can use historical performance matrix to help us estimate the risk free
46 rate or beta correlation with market returns of market risk premium so that
47 means that this information would at best be kind of relegated to this nebulous

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1 bucket of cross-checks and then so how does that work? We apply this
2 cross-check after we've estimate risk free rate, beta, and MRP. We've got to
3 what we consider as a regulator our best estimate with the required return, then
4 we look at this historical data and apply a cross-check and either it's a binary
5 thing right so either we're going to look at the historical data and say well we
6 think it's a tick, we pass the cross-check and we won't go back and revise any
7 of these perimeter estimates or somehow we've got some threshold and we
8 decide that it's failed the cross-check and that's going to be some sort of trigger
9 for us to go back and revisit the parameters. So if it's the latter and we're only
10 going to write down parameter estimates that satisfy this cross-check why don't
11 we just start with the cross-check and just allow a return that we know is going
12 to be satisfied. Do you see what I'm saying?
13
14 MS CIFUENTES: Absolutely. And is that a - is that relevant to cross-checks
15 generally speaking?
16
17 PROF GRAY: More generally? Absolutely. But I think--
18
19 MS CIFUENTES: All right so we may come to that but I think that is quite an
20 important issue the role of cross-checks.
21
22 DR MIRRLEES-BLACK: One thing I'd like to raise and it reflects the stake
23 holder submission on this where one of the stakeholders is suggesting that this
24 information should be used in the context of thinking about the required rate of
25 return and its well if you had this information on profitability you'd ask three
26 questions as a result of it. The first is are actual returns higher than allowed
27 which Greg's already covered and it doesn't necessarily mean that the rate of
28 return is right or wrong but it just reflects other factors. Secondly are actual
29 returns higher than in comparable businesses which leads to the question of
30 what are comparable businesses and have you got comparability in your
31 measurement; and then thirdly are allowed returns higher than investor
32 expectations were. So whether asking those three questions helps the
33 deliberations it may do. But those are three ways in which you could use that
34 information now it may be that it falls into the cross-checks heading to use this
35 in that way but it was a frame work for thinking about how you might use this
36 information.
37
38 MR SADEH: I still can't get past the fundamental principle about comparing like
39 with like and then 2. If you could then are you using a representative dataset?
40 Now you know whether it's a fluke or not I really don't think it is, but the listed
41 networks tend to also be most of the top performing entities within the broad
42 benchmark. You're holding everybody to a hypothetical average which was
43 actually calculated off the top performers and good for them for doing a good
44 job. That's why they're getting outperformance on the Opex which back to the
45 principle is why they're generating a return which would be you know
46 cannibalising to put off set of that into the rate of return.
47

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1 ASSOC PROF PARTINGTON: Just on that particular point there is a literature
2 on computing the internal rate of return from accounting data in other words you
3 do it entirely from the accounting data. I haven't done it so I don't know how
4 good it is but there are some top researchers, people like ..(not transcribable)..
5 for example ..(not transcribable)..
6
7 PROF JOHNSTONE: You just told us about accounting data minute ago
8 though in a different way. Subject accounting standards right and changes,
9 garbage in garbage out.
10
11 DR MIRRLEES-BLACK: Are there any more points that people want to raise
12 on profitability or questions? In which case I mean I think a range of views I
13 think David is saying that there is a role for this data and it should be collected
14 and used in deliberations. There are other views that it should be collected, not
15 quite sure how it should be used but it may be used elsewhere in the regulatory
16 process, and there are also views that it provides no information on the rate of
17 return guideline and it's other factors which are determining the returns so I
18 think that's--
19
20 MS CIFUENTES: Jonathan, just going back and I'd like the use, Stephen's use
21 of the word the vibe, you know you've got to look at the data, there's the data
22 and then there's the vibe. Is this the sort of information that fits into the vibe
23 category because we've got all sorts of problems about limitations of data,
24 some of the measures are completely meaningless, you might end up doing
25 this internal cannibalisation and I take the point about the cross-checks you
26 know I agree with that. But is this one of those bits of information that maybe
27 informs not so much the rate of return but the process of putting the
28 submissions together? The proposals together? So that which takes it out of in
29 a sense the consideration of rate of returns which as Greg's pointed just doesn't
30 sit here, but is this one of those sort of categories of information that side in the
31 vibe that the businesses, consumer groups, talk about in putting their proposals
32 together?
33
34 PROF JOHNSTONE: This data is as hard as probably most of the data you
35 deal with because it's things like cash surpluses, it's how much cash is
36 invested, these are observable things. To not observe them would be very
37 remiss. I mean interpreting them is not going to be necessarily straightforward
38 but this of all the data that would feel into this process observed cash surpluses
39 and amounts invested, probably quite a few other black and white things, are
40 unarguable. They're auditable.
41
42 PROF GRAY: I think that - I don't know whether this is what you're suggesting
43 but if it is I think it's an excellent idea, but--
44
45 MS CIFUENTES: Well then clearly that's not a suggestion.
46
47 PROF GRAY: It could be something that is worked through between the

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network businesses and a consumer reference group, because I've had like a little bit of exposure to that process and joint work being commissioned to just understand and explain to all stakeholders what's been the source of growth in RABs over time. This could be a sort of similar type of exercise where there's you know many reasons why firms would have had whatever level of profitability or outperformed or underperformed some index and to the extent that there can be some common understanding of those issues and that there wasn't you know some kind of luck or largess that here are the reasons, that I think that would be a helpful place in the process for that kind of work to be done.

MS CIFUENTES: Essentially that's what I was suggesting that--

PROF GRAY: And I agree I think--

MS CIFUENTES: But it does take it in that sense out of the rate of return guideline and I think - I don't think that we've got agreement there because as David's saying this data quite rightly is as hard or not hard as a lot of the other stuff so it is a consideration. It could be taken out of the rate of return guideline but equally it has the same hardness status as some of the other stuff we're being asked to look at.

PROF GRAY: There's hardness and there's relevance.

DR MIRRLEES-BLACK: But when that data is standardised other regulators do use it to report on exactly those issues which is sources of outperformance, underperformance, was the outperformance to do with things that were under the control of the businesses or for other reasons and so yes it does form part of the regulators interest groups.

MR HOUSTON: I agree. I think it has a place elsewhere in the regulatory framework. I come back to it. I still don't think you can ever tell us whether the rate of return that we set at the time was a good one.

PROF JOHNSTONE: That's not the point. It's about the setting now and what it tells us about the setting now.
MR COX: I mean, the reality is that this is the sort of things that people do care about. I mean, it's going to be part of the debate anyway, and it may not be a clear link to the rate of return, but it's not irrelevant.

MR SADEH: If it leads to overall discretion, that's the fear that I have to start with, that you can have a bunch of codified objective transparent rules with all the binding rate of return guidelines and then something on the side that's a black box. That's extremely concerning.

PROF GRAY: Particularly if that's applied retrospectively. We set our best allowance last time around. We look back over five years, see you did pretty

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well and say you're going to set an allowance below what we think is the best estimate this time. So trying to balance things out. I think that's the real danger.
PROF JOHNSTONE: There's the danger the other way though, too, isn't it, that we might adjust it upwards as well. So it's always coming down to the judgment in the end, and this information feeds very much into that judgment. I mean, what business doesn't look at its past performance when it's making its current decisions. I mean, what regulator would not look at regulatory outcomes when making current regulation?

DR MIRRLEES-BLACK: Good. I think we need more discussion on in amongst ourselves, but that helps with the discussion on it. We will break now for half an hour.

SHORT ADJOURNMENT

Thanks very much everybody.

Two halves, first half is 30 minutes, enterprise value to regulatory asset base multiples. Second half, flexibility analysis.

So, for enterprise value and regulatory asset base, I'll ask Stephen Gray to make some opening remarks before other experts respond.

PROF GRAY: I'll be pretty brief, and we can get into some discussion. I guess the framework is probably Daryl Biggers' paper. Where he makes a couple of points. The first one is that there are many varied reasons why a bidder might pay above the regulated asset base. So, someone thinks that the risk of things like the existence of unregulated assets in the business, the value of incentive payments. Value of synergies, the possibility that the winning bidder might have overpaid. The existence of a control premium, he also mentions management efficiency, and mark to market of a debt portfolio. So there's all those things that Daryl recognises, correctly, I think. They're all reasons why a bidder would pay above RAB.

The next point that Daryl makes is, it's nigh on impossible, I think, to determine how much of the RAB premium was attributable to each of those things, particularly because some of them overlap, and it's a very difficult task. What Daryl concludes is that we might look at RAB multiples, and if somehow we think that some recent transactions have had multiples that are somehow too high, whatever that means; then his conclusion is that at most, that would mean a trigger for further investigation. Which brings back to the general point about cross checks. What does that mean?

And if it's the case that the RAB multiple will override our first stage efforts to get the best estimate, then why do we bother with that first stage? Why don't we just set a return based on the RAB multiple. And if we're not going to

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1 change our best estimates based on the RAB multiple, then why do we look at
2 that. I think that's the issue that we have to come to grips with. I might stop
3 there, there's a lot of other issues, but probably they'll arise during the
4 discussion.
5
6 PROF JOHNSTONE: The list is a good list, and it's interesting to look at all
7 those things, but it is a one sided list, because it doesn't talk about the most
8 obvious candidate for why the RAB multiple might be too high, and that is that
9 the tariff stream is generous. So in other words, that the cash flows flowing to
10 the investor actually exceed what they would require relative to the exception of
11 risk. To drop that one off makes them not realistic, in a sense.
12
13 Then also, it's probably likely if we put a list together of why the market RAB
14 multiple could potentially be less that one. So, there's only half the story there
15 in that list.
16
17 PROF GRAY: In Daryl's defence, he was providing a list of reasons over and
18 above.
19
20 PROF JOHNSTONE: Yes, that's what I'm saying, it's a one sided list.
21
22 MR HOUSTON: I think it's a complete list, but does it include the point you're
23 talking about
24
25 PROF JOHNSTONE: Included?
26
27 MR HOUSTON: Included the point you were talking about.
28
29 PROF JOHNSTONE: I didn't hear that point, the point that the revenue
30 stream's too generous. Was that mentioned?
31
32 PROF GRAY: Yes. Just for clarity. So Daryl's paper was from the perspective
33 that it's often proposed that if you see a RAB multiple above one, it must be
34 because the regulatory allowance is too generous. And his point was there are
35 these many other reasons why--
36
37 PROF JOHNSTONE: So he's conceding that is a hypothetical reason, so
38 therefore it could be on the list.
39
40 PROF GRAY: Absolutely.
41
42 PROF JOHNSTONE: That's the point I'm making.
43
44 PROF GRAY: But how much is attributable to each, that's the main point that
45 he makes.
46
47 So, Greg, Ilan, Graham? Would you like to make a comment on RAB

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1 multiples?
2
3 ASSOC PROF PARTINGTON: Basically to reiterate what's been said, that
4 there are three reasons. One is that the investors have a lot of discount rate,
5 the rate they've been given. Or, they expect cash flows greater than those
6 allowed by regulation, for some other reason, it could be tax, it could be
7 efficiency, it could be a whole list of things. Some of which are mentioned in
8 the paper, and all sorts of little possibilities as well. It's based on an expectation
9 that somewhere, extra cash flows are going to arise, over and above the
10 regulated cash flow. That's a possibility.
11
12 The other possibility is real options. And that's the really difficult bit to nail
13 down, because there are options to grow, options to contract, options to switch
14 technology, options to wait, options to accelerate in cases. How much is that
15 worth? Well, it's worth something, definitely not captured in a standard DCF
16 analysis.
17
18 PROF JOHNSTONE: Consistent with all those things is the potential, it's like
19 an auction. The foresight that we may gain the regulator. That's an obvious
20 consideration.
21
22 ASSOC PROF PARTINGTON: That's certainly part of the option mix.
23
24 DR MIRRLEES-BLACK: Ilan?
25
26 MR SADEH: Multiples clearly have been going up, and it's fair for anyone to
27 ask why would that be the case? Why is that something that is part logical,
28 partly a function of our markets in terms of demand for assets, more
29 aggressive. Start looking at the fundamentals of the network. So if everything
30 else stays constant, what else is changing that will impact the multiple?
31 Obviously the focus has been shifting in recent years to the incentive
32 mechanics, and the entities that we have, their ability to outperform. That
33 outperformance, in a relative sense, becomes higher in the sense when you're
34 moving from a high investment cycle to a low investment cycle for a while.
35
36 So in my mind, if nothing else changed, you would expect your RAB multiples
37 to eventually cycle a bit, following that outlook for Capex. As people have said,
38 unregulated value, that is quite material, and that is different between
39 businesses, notably look at the differences in purported multiples of Ausgrid
40 versus multiples on transmission and Endeavour. Distribution businesses have
41 other things that are - I heard a great term, NAB and PLAB, that are not part of
42 the RAB. But public lighting and metering that are not part of the RAB, but
43 nevertheless are things that require to be operated. There are customer
44 connections as well that don't appear in the RAB of a distribution network.
45 So I'm not trying to bamboozle people by saying there are a whole lot of
46 reasons, and it must be, nothing's changed. But there are definitely reasons
47 that RAB multiples will change over time as well.

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1
2 MR HOUSTON: I was just going to raise the point that given the long term
3 structural decline in interest rates, that we've observed in the odd brief, but two
4 more decades, perhaps three. And given, putting aside the recent introduction
5 of a trailing average. But given a regulatory scheme where every five years the
6 revenues are reset, based on, at least till recently, prevailing risk free rates, and
7 what goes on top of that. You would expect, even if that process involved
8 expectations of cash flows that were perfectly realised. And so perhaps in all of
9 those conditions, you get a RAB multiple of one.
10
11 But in that world of structural declining interest rates, where any regulatory
12 determination is going to be a bit out of date, and if reset on that particular day
13 would be lower, given the way that rates have gone. You would expect a
14 better, or buyer coming along, and taking complete control of the business, in
15 one transaction. You'd expect them to pay more than that, because they are
16 bringing new capital on that day, which is at a cheaper price that will have been
17 at the time before, when the regulatory determination was made.
18
19 So that's a phenomenon that we see, of a declining cost of capital in nominal
20 terms, due to the macro economics.
21
22 PROF GRAY: That's the mark to market of the debt.
23
24 MR HOUSTON: Exactly.
25
26 PROF GRAY: So like a simple numerical example. Suppose you had $100 of
27 debt, perpetual debt. To keep it simple. You had $100 of debt that you issued
28 at 8%, when that was a fair market price. So you're paying coupons of $8 a
29 year. Then sometime later, market interest rates have fallen to 4%, and the
30 business is taken over. The present value of the debt, how much you'd have to
31 pay to release yourself from that debt, has gone from $100 up to $200.
32
33 MR HOUSTON: Exactly.
34
35 PROF GRAY: The mark to market value. So the new bidder would have to
36 come in and pay $200 to release that debt. And that would appear as a RAB
37 multiple. But all they've done is taken over the original guy's $8 coupon.
38
39 MR HOUSTON: Correct. So that's exactly the phenomenon I'm referring to.
40 So, in some sense, if you take the New South Wales transactions, we know
41 they were financed by not perpetual debt, by a long term scaling debt, always at
42 higher rates by definition than the current prevailing rate. What you're
43 witnessing is a transfer of loss of a debt ..(not transcribable).. a mark to market
44 loss on a very large debt portfolio. So part of the RAB multiple is compensating
45 the taxpayers of New South Wales for the market to market loss they've
46 suffered.
47

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1 I haven't quantified it but--
2
3 MS CIFUENTES: Does it work both ways?
4 MR HOUSTON: Yes. So what now, going forward, if one was to believe that
5 we could be at the bottom of the global interest rate cycle, and we have risk
6 free rates going from sort of high twos to four or five, over the coming few
7 years; and then you start engaging, and think, what would be the RAB
8 multiples, in that environment. Where there was no regulatory outperformance
9 of the other things, you would expect them to be falling below one, exactly the
10 reverse, exactly the same effect.
11
12 So I think we need to be, it's just another reason to add to the caution, and I
13 don't think it's mentioned in Daryl's paper, but it is a quirk of the whole business
14 refinancing patterns, in one snapshot at the time of these major transactions,
15 and it's quite an important effect.
16
17 MR SADEH: We were talking about privatisations. I think, in my experience,
18 that could be a handful of basis points on a RAB multiple. It won't be one
19 decimal place, it will be three to five, whatever, and it will depend on how far
20 from the last determination was the acquisition. Yes, the last couple of years
21 invariably with rates going down, and you buy, as effectively the subsidised a
22 little bit for the first half of the regulatory period by the outgoing seller, that will
23 change as anyone settles in the next few years.
24
25 DR MIRRLEES-BLACK: Can we just break down the question into two, which I
26 think we can, which is, first of all, does data on EV to RAB multiples provide
27 information about the allowed return compared to the cost of capital and then
28 the second part of that, if the answer to that question is yes, then you can say,
29 well, if so, what do you do with that information and does that actually influence
30 the way that the AER should be doing anything? So, on the first point, I think
31 you've said that there are some calculations that can be done, but do you think
32 that EV to RAB multiples can tell you information about what the allowed return
33 is compared to the cost of capital?
34
35 PROF GRAY: I think, like, a good setting to consider that is the TransGrid sale.
36 So, TransGrid changed hands at a time when the allowed return on equity was
37 7.1% and there was a multiple, depending on how you compute it, maybe 1.6,
38 so the question is, what does that 1.6 tell you about the 7.1% return - allowed
39 return on equity at the time? That 7.1% was going to apply for four out of
40 99 years, so it's not clear that that first four years is going to be a material part
41 of present value that the bidder has computed. Most of the value is going to
42 relate to what the bidder thinks allowed returns might be in the remaining
43 95 years, so I'm not sure, it's a huge extrapolation to say, because I observed
44 that multiple I know that the allowed return for the first four of 99 years must be
45 too high.
46
47 MR SADEH: That's exactly what ..(not transcribable).. say that, because I was

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part of the lead consortium on that transaction, so it was a little bit less than 1.6, but largely around there. The way that we would look about it, you know, to myself, to my investment committee, to our investors, how do we justify a RAB multiple to us is not a reason to pay anything. It ends up being an output of the valuation that you do and how do we attribute the value of the business that we see, you know, we see the pure regulated - the pure RAB business today, we see the future opportunity for RAB growth, we see the opportunity for out-performance in the incentive mechanisms and that ends up effectively adding you up to a total regulated day. The problem about a RAB multiple is you don't have a regulated purchase price and a regulated asset. In TransGrid's case, the transmission is quite a material amount of unregulated value in the RAB and in particular, that's a lot higher than it was a few years ago given the state of the renewables industry, given the nature of future connections into, you know, the fact that they're just not part of ongoing RAB and that's different to the rest of the world. If you would compare - again, there a few different factors, if you would leave everything else identical and you would compare one of the privatisation RAB multiples to an overseas RAB multiple, you'd probably also be overstating the multiple here by about 5-ish per cent, because stamp duty is included in that RAB multiple as a headline multiple of government, you know, shows if you would be buying that same business overseas, that would be a transaction influence that would be outside ..(not transcribable)..

PROF JOHNSTONE: Here we're saying that the market value, the RAB multiple is completely explainable, but previously we were saying that the market value - sorry, we're saying here that the market value of the entity is not actually capping true to the entity in the sense that there's a lot more potential to it, but previously we were saying that the market value is capped during that current, true to the entity when we use it to measure beta and things like that. We're putting differential importance on it depending on the context.

MR SADEH: There's a difference between risk and value. Let's assume if the risk of, you know, core regulated or ancillary regulated revenues existing unregulated and future unregulated, they all have the same risk profile when the beta is identical between them all, but the value of the business is totally, you know, influenced by the size of those different opportunities - totally different concept.

PROF GRAY: I don't think anyone's suggesting that market value's wrong, or like an unreliable number. I think the market value is what the market value is. I think the point here is it's hard to disentangle that market value and attribute it to a myriad of different factors, which is what would be required in order to say anything concrete about what it implies about allowed returns.

PROF JOHNSTONE: It's hard to say that something concrete, but it certainly - it's a good symptom of the appeal of these assets to the market.

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1 DR MIRRLEES-BLACK: Just going back to a point that Steve made, I mean, it
2 is true, that backing out the discount rate from the market value and the RAB
3 itself is the same problem as the dividend growth, which is, you've got to make
4 a terminal value assumption and there is ..(not transcribable).. upon that.
5 However, going back to Steve's earlier comment about sensitivity analysis, one
6 could have various terminal value assumptions, such as, you know, the terminal
7 value is the right one, there's some growth rate or some rate of decay by which
8 time you come to equality between the RAB and holding back. There's all sorts
9 of possibilities, but you could do a sensitivity analysis.
10
11 I think that comes back to my question, which is, can you infer anything about
12 expectations about allowed returns compared to the cost of capital from RAB
13 multiples? Stephen has outlined and then followed Daryl Biggers' paper that
14 there's a set of calculations that you can do that leads you there and you can
15 get to an answer and there may be some assumptions we have. Does it
16 provide any information?
17
18 ASSOC PROF PARTINGTON: Well, just like the early discussion, right, it's
19 history. Then the question is, how does history inform the present? If history
20 says, well, it does look as though the rate was too high or too low, the regulator
21 might then say, well, what mistakes did we make, can we learn from that - I'm
22 not suggesting they automatically make an adjustment. What I'm suggesting is,
23 what was it in our prior processes that led to an error in our rate setting and can
24 we fix that?
25
26 PROF GRAY: There's a bit of a risk to the regulator as well, in that we don't
27 have many - we don't see many of these transactions occur. They occur quite
28 infrequently and so it has to be a timely transaction to be relevant and each
29 transaction is somewhat unique. One possibility is, just to take an example,
30 suppose there was a quite inefficiently managed network that was sold and the
31 new owner attributed significant value to improving management, improving
32 operating costs and so on. There is a lot of out-performance to be expected
33 and therefore, they paid a relatively high multiple because they thought the
34 improvement relative to the status quo that could be achieved is really quite
35 material. There's an issue if we then take that RAB multiple and then somehow
36 use that to effect a return that we're going to allow across the whole industry.
37
38 MR SADEH: You only need to look at the prevailing precaution of RAB multiple
39 within Spark as an acquirer of TransGrid at the same time. Whoever bought it,
40 the same acquisition multiple as their trading multiple reflecting the differences
41 in the business. There was a big difference there and a lot of that reflected
42 TransGrid as a transmission asset having unregulated opportunities that the
43 bulk of the existing Spark portfolio, being a distribution network, so it was a
44 different thing.
45
46 ASSOC PROF PARTINGTON: I completely agree that you can't just assume
47 you've got the right range. You need to try and analyse what the sources of

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1 differences in value are due to. Now, it seems to me, from what I'm hearing,
2 you've got some pretty good insights into that. Given that you're going to be
3 secondly on the and consulting to investor panel, maybe they might be a useful
4 source of information in relation to why these multiples are what they are.
5
6 MR HOUSTON: I think let's just sort of examine that proposition that we've got
7 good insight. I think it's reasonably clear that if we take some of the other
8 approaches we've been talking about to parameters, debt risk premium, market
9 risk premium, so on, essentially in those we're looking at market value and of
10 course, there are discussions and disputes about the best way to look at market
11 value, but currently we have a data set that's objective and we make judgments
12 or we apply methodologies and we have to make judgments about to that data,
13 but when we're talking about a particular transaction multiple, first of all, we're
14 engaged in a sort of pretty complex dissection of an individual transaction and
15 that seems to me to be a wholly different proposition for a regulatory process or
16 regulator to engage in compared to the former and it's inevitable that the
17 attempt to dissect that transaction and the different sources of value will involve
18 a huge amount of subjectivity. Indeed, it will involve information that won't
19 readily be available to that regulator and you'll have to think about what process
20 he might go through to obtain that and I think the question is, if you did go down
21 that road, would you end up with - in a position where you would be better able
22 to form the judgment that you were otherwise making with market data and to
23 leave in a better position, you'd have to be confident that the subjectivity on the
24 transaction specific dissection process was less than whatever judgments you
25 need to make in analysing and organising and on market data. I'm not
26 convinced that you would be in a position where you would have reduced the
27 subjectivity, in fact, I think you may have added a lot of subjectivity and still left
28 yourself quite uncertain about what to do with whatever answer you come up
29 with and you're also taking on quite a challenging process in terms of what you
30 need to - the information you need to get and how you need to think about it.
31
32 DR MIRRLEES-BLACK: I think there's one point that is worth raising here in
33 that the discussion that you've had has been referencing transaction data, but
34 of course, you can also get RAB multiple data from listed entities.
35
36 MR HOUSTON: Just on - I agree, that's another source of - and it's clearly set
37 out in the paper. I think that the first thing I want to do with it - this is not an
38 idea that has only just emerged out of the woodwork in Australia - is a long
39 history of US regulated utilities where indeed, they use - there's such a deep
40 market there that they use analysts' forecasts of dividend growth as a critical
41 input to their calculations of the estimations of the cost of equity and so we
42 have a deep market in the US of listed utilities, all of whom generally in history
43 have traded at a positive multiple of their equivalent of the RAB. Now, then
44 we're not the first people to ask the question, why would that be and have
45 sought to explain that. One question I think would be straight away for careful
46 examination is, do the kind of trading multiples that we see in the very limited
47 number of listed utilities that we have here, are they a lot different, or quite

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1 similar to the rich deep set of observations of essentially the same thing in the
2 US? Obviously, they have a different system of regulation. We need to take
3 that into account as well, but if you want to look at trading multiples, then you
4 really need to understand what you see here in the context of what you see
5 elsewhere and we've got the UK as well and I guess the question would be, is
6 there any reason to think why we in Australia are an outlier on that question?
7 It's not - haven't done the work, but it's not obvious to me that we are, but
8 perhaps that's a question that you could consider. Even if we were an outlier,
9 the question would arise, well, is that because our rate of return is wrong or
10 because of some other part of our regulatory scheme needs examining? But I
11 think it is important to understand that we're not alone. This is a variable that is
12 around the world and just to understand where we sit would be a very important
13 first question on the trading multiple question.
14
15 PROF JOHNSTONE: I know we can construct good theoretical arguments for
16 why the RAB multiple might be greater than one, and I can probably add to
17 them things like the behavioural finance and viewpoint of overconfidence and
18 myopia and things like this, but on the other hand, just suppose these RAB
19 multiples we are observing were .7 and .6, what would be the reaction then?
20 Wouldn't the automatic reaction then be that the regulator is not rewarding the
21 entities enough to attract people to buy? So we are having our cake and eat it
22 too. When it's too high, we want to ignore it but if it was too low, I can
23 guarantee we would not be ignoring it.
24
25 PROF GRAY: I don't think that for theoretical reasons, I think we got advice on
26 this as well and there's a giant pimple that is produced, that forecast the cash
27 flows that you get from all these different things, discounts them back to a
28 present value and that's the number that is given.
29
30 MR SADEH: It would be great if you looked at buying into what is based on the
31 record, go to sleep for six months and wanted to kill myself on a bid because it's
32 the last thing we look at. It is a simple cross check but I agree with what Greg
33 said, that it would be - is there information? Sure, there is some information. It
34 would be crazy to say there is nothing that you could ever gain from it but it's
35 the relative insight that it gives you compared to the risk of how you can use it
36 in a subjective way that would concern me. I mean, do we look at international
37 rate multiples when we look at Australia? Well of course we do, you know,
38 what do you see in the UK for example? Until recently most of the multiples are
39 in the water sector now. Why does the water sector have a lower multiple than
40 Australian utilities? There's zero unregulated revenue which is not part of the
41 feature of the landscape. So we always do look through them but there's so
42 much dirt in comparing them as simplistic measures that it's dangerous to say
43 that you could then use them for an expression.
44
45 MR HOUSTON: And I think to your point David that Daryl Biggers' paper points
46 out a number of good theoretical reasons why they will on average be higher
47 than one which is the fact that these figures are not - none of them conform but

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1 they are pretty tight conditions and you need them to be one so on average we
2 should expect them to be greater than one. There is plenty of literature out
3 there that supports that.
4 So it's not the observation that multiples greater than one is the problem. The
5 question is is there some multiple at some level that we can say is a problem in
6 terms of suggesting we accept the rate of return too high? And that what Daryl
7 is saying is I think we are all saying, it is an extremely difficult question to
8 answer and if you set about the process of trying to answer, when you get to
9 the end will you be any better off?
10
11 PROF JOHNSTONE: Yes, I definitely accept that there is potential growth and
12 things like this, growth options and so on that can make the multiple greater
13 than one. But in the end, feeding into the valuation of what we were talking
14 about Ilan is this cash flow stream and that's the regulating cash flow stream.
15 The question is how big a component of the valuation you put on the NPV in the
16 end is that and its reliability? Now I think that is what I would have thought
17 would have been a focal point in a valuation of one of these entities that an
18 outside market participant would have. They want to know how much money is
19 it going to be and how reliable is it and how long is it going to last and how can
20 we gain control over it and maintain it and all those sorts of things. I am sure
21 you do that. So that focuses back then well is that cash flow stream therefore
22 potentially too generous. And that question won't go away because it is a
23 plausible explanation for a rate greater than - multiple greater than one.
24
25 PROF GRAY: I think here's the question that you really - you would never get
26 this answer because it is obviously super commercial in confidence, but here's
27 the question that you would like to be able to unravel which is, so you have got
28 a bidder who produces a bid model and the question is would you have been
29 prepared to pay up to a price, a price such that if you applied the internal rate of
30 that assumed equity, was equal to the allowed return? And so the answer to
31 that is always no. So the only way that you can get an appropriate return to
32 equity is you get some of it from the allowed return but then there are extra bits
33 that come from - end up climbing through the equity profits--
34
35 MR SADEH: And incentives from--
36
37 PROF GRAY: And incentives et cetera et cetera. That's the only way you
38 could get up to--
39
40 MR SADEH: And it's an NPV of all the future superior incentives, it's not just
41 the next--
42
43 PROF JOHNSTONE: Yes sure but it still doesn't answer the question of how
44 big a component in that rate multiple of 1.6 is the fact that this is a regulated
45 income stream? That's the--
46
47 MR SADEH: Sure--

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PROF JOHNSTONE: That's the question--

MR SADEH: --let me not answering that given commercial in confidence--

PROF JOHNSTONE: That's the question, isn't it, and all this argument under the sun we won't get to the bottom of that.

DR MIRRLEES-BLACK: I think we probably got where we need to get to in terms of rate multiple this afternoon, but I think it is fair to say there is still a range of views and some are saying you might be able to do some calculations and make some assumptions and come up with an estimate of where you are and that will provide us with some information. You might be able to do something else. There is also strong views that it is doing to be quite difficult to do those calculations and it is not clear what you would do with that information if you would have it. I think we would have to and the joint paper would have to reflect that right of any views unless they change between now and this afternoon. Do you have any further questions on rate multiples?

MR COX: No, not from me. That pretty much covers my view.

DR MIRRLEES-BLACK: The last session is on financeability and we ran out of experts, so I took on the role of introducing this one, so I will be very brief and invite questions from the experts. First of all, I think it's worth saying what financeability and ask this. It is set out in the paper that the AER has circulated but financeability is to assess whether a company is able to fund its investment program and the basic financial ratio tests based on the way credit rating agencies assess whether a company's investment grade given the expected cash flows generated by the regulatory price determination. So essentially it is suggesting a regulator might have a financial model, as you do here, have a financial model of the regulatory settlement and regulatory determination, and given that regulatory settlement it would make an assessment of what the credit rating and other - what the credit rating financial ratios would be under that financial settlement and see how it performed under those assumptions.

So the question, what the regulator would do is look at credit metrics, credit rating agencies do and then be concerned with its -the notional company was to look too comfortable under credit ratings or credit references or whether it looked like it was stress. So then the question is let's suppose a regulator were to do that, does that have any role in the regulatory process or does it have any role in particular in the setting of the rate of return, and I think rather than me give any view, I suggest that's for the panel here. Does this type of financeability analysis in assessing whether a settlement allows a company to - how it sits in terms of ratings? Does that play a role in setting rate of return?

ASSOC PROF PARTINGTON: Can I ask a question? My question is how

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1 does that rate to the zero NPV criterion?
2
3 MR HOUSTON: Could I try and answer this?
4 DR MIRRLEES-BLACK: Yes.
5
6 MR HOUSTON: I think the - as I would describe it financial ratios amount to an
7 evaluation for time profile of cash flows, whereas a zero NPV held or whatever
8 you want to call it, is the NPV principle is - ignores the time profile of cash flows
9 in the sense that it is the NPV of the cash flows that whatever, you know, given
10 the timing in which they occur. Whereas the financial ratio question will be
11 affected by when those cash flows occur, obviously all discounted
12 appropriately.
13
14 So they go to really whether the set of cash flows you are talking about will
15 achieve an investment rate of credit rating because that affects their time - in
16 the timing of those cash flows affects their ability to withstand their credit rating.
17 So you could have a zero - cash flows that were zero, zero, zero for a
18 100 years and then some fantastic amount and that would be - it is what it is,
19 but they would not be able to achieve an investment great credit rating to invest
20 in those cash flows. I think that's the sort of fundamental distinction between
21 the two.
22
23 ASSOC PROF PARTINGTON: I don't disagree with that, but the question is
24 then how does it link back to the objectives that we are trying to achieve?
25
26 MR HOUSTON: Well for my meaning it's got very much all to do with the
27 question of what is the appropriate - what is the market rate of return. It may be
28 relevance for testing whether a regulatory determination which applies that
29 market rate of return to a set of cash flows over the coming five years is
30 capable of achieving a lesser credit rating. In the circumstances that it may not
31 be capable of achieving that credit rating would be if there was hypothetically a
32 very, very large capital expenditure program that was large by proportion as a
33 proportion of the RAB as it was at that time. In that circumstance questions
34 arise as to how you might adjust the time profile that cash flows to achieve the
35 necessary credit rating which can be done on an NPV zero basis by altering
36 timing of depreciation in such luck. Beyond that I don't think it has much to say
37 about the appropriate return on capital.
38
39 PROF GRAY: You can think about it as a test of the internal consistency of the
40 regulatory determination, so the allowed return is based in part on assumed
41 credit rating, and then you can observe whether the allowed returns produce
42 financial metrics that would support--
43
44 MR HOUSTON: Yes.
45
46 PROF GRAY: --the credit rating that it assumes. And if there is a dislocation
47 there and there is an internal consistency it would reveal it.

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1
2 DR MIRRLEES-BLACK: David, do you have any thoughts on financeability?
3
4 PROF JOHNSTONE: I just got the impression that the credit ratings agencies
5 are recent - their behaviour as reflected by the fact that so many of these
6 regulator assets have been re-privatised in the world or bought out. It suggests
7 to me that the general perspective from the outside world is that these are safe
8 cash streams at least relative to what is happening in the broader economy.
9 That's my overriding impression and I think I would expect the ratings agencies
10 actually see them. That way they allow - I think they have in mind that these
11 entities could buy very large sums relative to RAB, large proportions and that
12 means to me that the ratings agencies suggest that those RAB based income
13 streams are very safe.
14
15 MR SADEH: I don't - certainly it works that they are supposed to be relatively
16 safe. That's their class fit. The agencies typically look at two or three metrics,
17 debt to RAB, BEEs we talked about before. Is there other issues with gearing?
18 It is really more particularly on low interest loans around interest cover metrics,
19 and the fact is that cash flow fluctuates and comes from more than a return on
20 your WACC. It is all available equity to service debt. So you always need to
21 look at the relationship at any point in time between debt to rate and further
22 debt as that other measure. At the moment given the cycle, the key rating
23 constraint tends to be effort voted in and not get to the--
24
25 DR MIRRLEES-BLACK: Can I just--
26
27 ASSOC PROF PARTINGTON: And presumably the rating depends on all
28 these other factors we have just been talking about which generate cash flow
29 and value and turns the cash flow around.
30
31 MR SADEH: Yes well that's where--
32
33 ASSOC PROF PARTINGTON: I'm agree with it.
34
35 MR SADEH: Yes and I agree with Greg's point as well that it seems to me to
36 be more of a yield profile issue but fundamentally if you are looking at an
37 unlevelled cash flow or a - there can be a total levelled but total corporate cash
38 flow, then why are you putting on a separate lens of just looking at the debt
39 serviceability of it. It it's a faux profile for these kinds of assets, you tend to look
40 through another lobe. Unless you have got such a large issue with an intra
41 period of Capex funding, how do you aim for the cost service funding service
42 until the assets are realised? That's the only way I see it.
43
44 DR MIRRLEES-BLACK: So just to summarise and to give an example, let's
45 suppose that you have it - AER does a financeability analysis of a projected
46 price determination. It discovers that - the cost of allowed rate of return
47 determined under the guideline. A notionally financed company breaches ratios

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1 maybe quickly during the course of that price control review. You would
2 argue - you would suggest that that was probably due to phasing of cash flows
3 so you won't want to change the depreciation schedule or alternatively you
4 might need to raise equity because this has got a large Capex. You couldn't
5 infer any information from that about the rate of return that would help the AER
6 in setting the rate of return? Is that a fair to say?
7
8 MR HOUSTON: I think so or to put it another way is that the cash flow - the set
9 of cash flows to which you're buying your rate of return which presupposes a
10 particular credit rating, those cash flows are not capable of supporting that
11 credit rating. So there's an internal inconsistency. You either have to alter the
12 cash flows to make them capable of supporting the credit rating or if you're not
13 prepared to do that then you have to revisit the credit rating and all of the
14 consequences that has all the rate of return parameters. I think it's probably
15 more attractive to revisit the profile of the cash flows, make them less risky by
16 bringing them forward and then you can stick with the rate of return and the
17 credit rating benchmark that you started out from. But they all must be
18 consistent.
19
20 PROF GRAY: If it turns out that there is this inconsistency between what was
21 assumed credit rating and what the allowed returns would support during that
22 regulatory period I think there's another piece of work which is to try to uncover
23 why is that the case. So like there are at least two possible explanations. One
24 is there's a temporary effect here and it may be because of some capital
25 expenditure or other reasons so that could be easily solved in an NPV neutral
26 way just by advancing some cash flows. The alternative is that there's a
27 persistent you get if you model forward - but there's a persistent degeneration in
28 the credit matrix and there's a sort of long term structural failure to reach the
29 assumed credit rating and that would lead you to revisit the assumptions that
30 we're making.
31
32 DR MIRRLEES-BLACK: Okay.
33
34 PROF GRAY: Just pointing that no matter how a substantive a question is
35 though, is this? By which I mean whenever I read rating reports utilities tend to
36 have a stable rating. How often do any of them get caught on a negative credit
37 watch?
38
39 MR HOUSTON: Well it's - I think that's separate. But that's an empirical
40 question and we can go to the sort of data on that--
41
42 PROF GRAY: But it goes to how much effort we should put in to investigate
43 this question.
44
45 MR HOUSTON: Correct. And I think but there are regulatory circumstances,
46 often in the water sector where there are very long lived assets being invested
47 in where given the regulatory model and the cash flows that are derived from

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that. In essence we have the cost of debt and the cost of equity are not too far apart and where you have indexed the assets according to inflation, so the assets are going up by 2.5%. So 2.5% of your return after paying for debt is going to inflate the value of the asset and the depreciation will only be one eightieth which is much less than 2.5%. And the consequence is an investment in an 80 year asset is cash flow negative for many, many years even though you're getting the whack on that asset.

That's a function of long lived assets and we don't see that as much in the electricity sector, you can see it enough from the credit in the water sector. So the theoretical potential does sometimes translate into real issues. Although I'm not sure that it's ever turned up in the electricity network.

MR SADEH: It'd be rare to see negative outlooks on ratings of utilities other than ..(not transcribable).. change in the regulatory determination 2 - 1 I think it mentioned that position. It would be a very brave buyer to buy something on a negative outlook and probably wouldn't satisfy a bank CP which will actually say I want a rating of X/stable.

The second thing is before you go through any material changes to your capital or your capital structure - sorry, capital expenditure and capital structure program mostly those spend a lot of time with rate agencies and get some form of feedback of no, we don't like that, that would lead us to do something and they'll pare it back before it ever gets out.
PROF JOHNSTONE: Remember also these ratings are actually interpretations of the financial performance measures that we were talking about before, the very things that we think we should look at directly rather than rush to the ratings agencies expression of them.

DR MIRRLEES-BLACK: Okay. So not necessarily a role directly in cost of capital determined or rate of return determination, a possible role to look at for consistency of the overall regulatory settlement, but that's sort of a different role from playing a role in the guideline. Do you have any questions on this?

MS CIFUENTES: No.

MR COX: Sort of. Well I think a lot of what we've been talking about this afternoon has been various sorts of cross-checks to the rate of return determination. I'm just wondering, and I think aloud here, suppose we were to go down the path of the binding rate of return guideline, perhaps the scope for these things would be less in other ways and that's something the experts might want to reflect upon.

MS CONBOY: Was that one of the things you were going to look at in your joint report in terms of the use of the cross-checks and how they would be used? Is that what I heard before lunch I think?

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1 MS CIFUENTES: Yeah, I thought it was a big issue.
2
3 PROF GRAY: Yeah, that is something which we said we ought to do.
4 DR MIRRLEES-BLACK: No, I think that's right. Yes, it was one of the
5 questions that we had amongst ourselves which is if this did have a role under
6 a non-binding guideline is it harder for it to play a role under a binding guideline.
7 There's obviously an issue there. Okay, well we've reached the end of finance
8 a bit early so perhaps we can move to the next section on the agenda which is
9 raising any other issues that the experts think we should be covering and then
10 concluding remarks on what we've learnt during the day. So I think I will open it
11 up for everybody to make remarks on--
12
13 MS CIFUENTES: Can I just intervene? Those that need to go early because
14 they've got flights now would be a good time, Paula? Just so you know they're
15 not leaving just because of a lack of steam.
16
17 MS CONBOY: Thank you very much.
18
19 MS CIFUENTES: Okay, there we go. No other issues, we've exhausted the
20 rate of return thank goodness, I thought it would never happen.
21
22 DR MIRRLEES-BLACK: So any other issues that the experts would like to
23 raise that perhaps we haven't covered in the--
24
25 PROF JOHNSTONE: My overall perception is that the panel this group
26 is - could be better balanced and I would love to see a country like Australia
27 have someone representing the manufacturing industry here. Because you
28 know it is a one sided discussion.
29
30 MS CIFUENTES: You mean the panel of experts?
31
32 PROF JOHNSTONE: Yeah, I think the panel it is a bit unfairly balanced in
33 terms of the regulator hearing all the views that would exist in community for
34 example.
35
36 MS CIFUENTES: So just to that point. The remarks that I was making when I
37 opened the session was to say that this is only one aspect of the consultation
38 process.
39
40 PROF JOHNSTONE: Yeah.
41
42 MS CIFUENTES: And I am very mindful of the fact that it is very difficult to
43 actually get a representative voice for some sections of the community.
44
45 PROF JOHNSTONE: Sure.
46
47 MS CIFUENTES: That's, you know small medium enterprise is actually

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1 particularly difficult because even within that categorisation you have very
2 divergent interests.
3
4 PROF JOHNSTONE: I could imagine how over in the US for example where
5 you've got a much bigger manufacturer sectors as part of the economy you
6 have a different makeup of people on a hearing like this.
7
8 MS CIFUENTES: We've also tried to get the views of a broad range of
9 stakeholders but you can appreciate that trying to explain, for example, I mean
10 we haven't even got into the detail of the traditional groups, you know to use
11 your language. We still haven't really got into the detail of that. Even this type
12 of debate and conversation is beyond the financial resources and capability of a
13 lot of those stakeholders. So even though we do try and extend that
14 consultation process it is by its nature--
15
16 PROF JOHNSTONE: Sure, I get that. But I think that probably their power
17 crisis is not helping their ability to put somebody in.
18
19 DR MIRRLEES-BLACK: Okay, well we obviously noted that. If we go round
20 the table, Graham, do you have any other issues?
21
22 ASSOC PROF PARTINGTON: I think I've said it.
23
24 DR MIRRLEES-BLACK: Okay, Ilan?
25
26 MR SADEH: Same.
27
28 DR MIRRLEES-BLACK: Greg?
29
30 MR HOUSTON: I don't have anything to add.
31
32 PROF GRAY: I was just going to ask if I can take this name plate home, my
33 kids, they won't believe that I'm an expert unless I have some documentary
34 evidence.
35
36 MS CIFUENTES: Stephen--
37
38 PROF GRAY: Which is ditto for my wife.
39
40 MS CIFUENTES: Let me tell you, my kids just have no faith in my ability to
41 anything about energy prices so. Rightly so. Rightly so. I don't think the name
42 plate's going to help. Maybe if I put professor or doctor.
43
44 DR MIRRLEES-BLACK: Well I don't think I should attempt to summarise
45 everything that's happened today, I think that would be too hard. But as
46 everyone knows there is a joint paper being prepared which will summarise the
47 discussions and developments of the thoughts among the experts and any

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1 agreed positions and clear statements of disagreements. Is there any other
2 remarks, Cristina, Jim that you'd like to make on the process or next steps or
3 anything?
4 MS CIFUENTES: Well I've got some on next steps but Jim did you want to?
5
6 MR COX: Nothing for me, no. No, I think we've covered the issues.
7
8 DR MIRRLEES-BLACK: Okay.
9
10 MS CIFUENTES: Okay, so then to close and I will be very, very quick. So first
11 of all thank you all very much. I take your point that the panel could be better
12 balanced and there is a range of views that we may not be accessing. But
13 notwithstanding that I think as the first of the concurrent evidence sessions has
14 actually been very successful. I think it is very useful to hear some of the views
15 and tease out some of those questions. So thank you. We will be publishing
16 an internally reviewed version but it will be un-proofed transcript to today's
17 session. That will be on our website tomorrow I think. Then you will have an
18 opportunity to review that and fact check it and we will publish the proofed
19 transcript as soon as possible.
20
21 We are going to have a similar publication process for the second concurrent
22 evidence issue on 5 April, which is shortly after Easter I think so fill yourself up
23 on hot cross buns and Easter eggs we'll need them. We currently have a
24 consultation window for submissions on both the discussion papers we've
25 published in advance for the concurrent evidence sessions and the transcripts
26 of those. The subs are due on 20 April.
27
28 A number of stakeholders have suggested we should extend the time for
29 submissions and also for our draft decision and after consulting with a number
30 of stakeholders we've decided to extend the time until 4 May. Did you know
31 that?
32 MR SMITH: I do now.
33
34 MS CIFUENTES: Our draft guideline will be published at the end of June.
35 Okay, so we look forward to those submissions in the next concurrent session
36 on 5 April. Thank you all very much for participating.
37
38 **ADJOURNED**
39

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