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

Transcript produced by Epiq

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, Capital Financial Consultants Ltd

Prof. Stephen Gray, University of Queensland and Frontier Economics

Prof. David Johnstone, University of Wollongong and Sydney

Mr Greg Houston, Houston-Kemp Economists

Mr Ilan Sadeh, Hastings Funds Management

Transcript produced by Epiq

COMMENCED

MS CIFUENTES: Good morning, thank you all for joining us. I'm Cristina Cifuentes and I'm joined by my fellow board members, Paula Conboy who is the Chair and Jim Cox. If you could both just introduce yourself for the transcript.

MS CONBOY: Paula Conboy.

MR COX: Jim Cox.

MS CIFUENTES: So I'd like begin by acknowledging the Gadigal people, the traditional custodians of the land where we are meeting today. I'd like to pay our respects to them and their cultures and to acknowledge the elders, past, present and future.

Thank you all for making the effort, particularly those that have come up from Melbourne to get to Sydney. We really do value your participation in this process. It will be a key input into the review of the rate return guideline. The purpose of today's session is to assist the board members in making decisions around a rate of return that will best achieve the NEO and the NGO and we expect that this session will help us do that by clarifying those areas where there are agreement, if there is agreement between the experts or areas of disagreement.

The session today provides the opportunity for you, the experts, to discuss your ideas with each other and to clarify how your assumptions and your conclusions differ. It will be an opportunity for the AER board to ask questions and seek clarification of your positions and through this we'd like to explore the materiality of the issues that have been raised, the implications of the issues, particularly for various stakeholders, the businesses, consumers and investors. And potential for resolution of some of these positions for those stakeholders.

We hope we can achieve this through a natural progressive dialogue and productive dialogue. We don't want this session to be overly formal and we appreciate that you've all committed to focussing on your positions rather than advocating necessarily the positions of organisations which you may have represented in the past. We appreciate your assistance in that.

1 It's important to note that this concurrent evidence session and the one that we have
2 scheduled later in April are only one piece really about overall consultation processes
3 and we will be continuing to have engagement with stakeholders in a variety of ways.
4 We will, following this concurrent session, continue to seek the views of a broad range
5 of stakeholders and to assist in this we will be actually publishing a transcript of today's
6 discussion and put that on our website. We will invite submissions to be made on the
7 two concurrent sessions and that will assist the board in formulating its views on the
8 guideline.

9 So as you know we have already published the three discussion papers and that
10 provides background and context for today's discussion. In those discussion papers
11 we've outlined our current approach to estimating the allowed rate of return as well as
12 some of the approaches from other regulators and previous experts' submissions.

13

14 As part of this process and with each of the Tribunal and court decisions around rate
15 return we have been reflecting on how the current guideline has been working. It was
16 developed, as you know, in 2013. We consider it's been rigorously tested, both
17 through the provision of expert advice and through the process of new determinations
18 and tribunal and court decisions. In our view we think that it's quite important that we
19 continue to build on the body of work. But in saying that I think we need to be very
20 clear that we are not limited or dismissing any alternative ideas. We, the board, are
21 very open minded about the evidence that is going to be presented to us. Rather our
22 hope for this process is that it will be a targeted approach to the review and that does
23 allow for a more efficient process and allows for more effective and targeted
24 consultation.

25

26 So the concept of a targeted and incremental review may actually seem a bit nebulous
27 and we have experienced suggestions in a number of directions. But overall I think
28 there is general consensus that we will be taking an incremental approach to this
29 review and we want everyone to respect that. So this concurrent session should help
30 us in narrowing the areas, matters in dispute and articulating the points of contention.

31

32 Turning very, very briefly to the COAG Energy Council draft legislation to make the rate
33 of return a binding instrument. That may raise a few topics of discussion about the
34 content that's required for a binding instrument and we will be addressing some of
35 those points in the presentation and obviously in our broader consultation with
36 stakeholders. What I do want to emphasise though is that whilst some stakeholders
37 may be wondering whether the binding nature of it will change the framework within
38 which we will consider this process, we don't see that any change in that, the
39 incremental nature of it will change itself.

40

41 So the overarching objectives of the rate of return as you know are set through the
42 NGO and NEO and the revenue and pricing principles and that's the case for both the
43 current and the proposed framework. So we're not anticipating any change to the NEO
44 or NGO or the RPPs. To the extent that our current approach does satisfy those
45 overarching objectives then the proposed legislation shouldn't necessarily require any

1 major change. It will require a more formulated approach to the rate of return and we
2 see this impacting on most of the return on equity and we would propose to explore
3 that further in a different session.

4

5 So before we get started just a very quick run though through the structure and agenda
6 for today. I will be chairing the sessions but we have Jonathan Mirrlees-Black who will
7 be the independent facilitator and you've all spoken and met Jonathan. Jonathan's
8 role will be to keep the discussion flowing and balanced and focussed. He will not be
9 advocating for any positions himself but his questions will be around clarification or
10 inviting alternative viewpoints. That will allow the board to focus on the content of the
11 discussion rather than on necessarily running the meeting and Jonathan will be
12 keeping you all to time and to task.

13

14 The members of course will be able to put questions directly to you and as I said
15 earlier the aim of this is to facilitate open forthright discussions and for that reason we
16 do have limited attendance and we will not be taking questions from observers of the
17 floor. So today's session has three topics. The allowed rate of return, compensation
18 for risk and use of data where judgment's required. Then we will move onto gearing
19 and finally the financial performance measures. So Jonathan may actually structure
20 the conversation a little bit differently depending on the amount of interest there and
21 that will evolve as the discussion takes place.

22

23 So at the start of each session each of the experts will have an opening statement and
24 then at the start of each of those topics there will be a brief introductory statement
25 before it's opened up more generally. So now if I could ask our experts to introduce
26 themselves for the transcript.

27

28 ASSOC PROF PARTINGTON: Graham Partington from the University of Sydney.

29

30 MR SADEH: Ilan Sadeh from Hastings Funds Management.

31

32 MR HOUSTON: Greg Houston from Houston-Kemp.

33

34 PROF JOHNSTONE: David Johnstone, University of Wollongong and Sydney.

35

36 PROF GRAY: Stephen Gray from the University of Queensland and Frontier
37 Economics.

38

1 DR MIRRLEES-BLACK: Jonathan Mirrlees-Black, Cambridge Economic Policy
2 Associates.

3

4 MS CIFUENTES: Thank you. So with that over to your Jonathan.

5

6 MR HOUSTON: Madam Chair, just may I raise a point of clarification? I understood
7 that Dr Lally was to be part of this session. Is that no longer the position?

8 MS CIFUENTES: Yes, it is.

9

10 DR MIRRLEES-BLACK: So the AER has sponsored two experts and one of those is
11 Professor Graham Partington and Martin Lally is the other one. Martin will be
12 participating on the session on gearing and Graham Partington will be participating in
13 the remaining sessions.

14

15 MR HOUSTON: Thank you.

16

17 DR MIRRLEES-BLACK: Okay. Thank you very much everybody and Cristina for
18 inviting me to do this role. I think it should be a very interesting day and I think that
19 what's important is that it's a new process. This is a context to the way the rate return
20 and the setting of a new guideline has been done in the way that things have not been
21 done before. But this new process I think allows us to learn our thinking on this and
22 should help resolve issues which have been contentious and those where there has
23 been agreement

24

25 So experts, new experts will challenge each other but the reason for challenge is to
26 help us understand, it's not for point scoring. We are seeking areas of common ground
27 and areas where there isn't common ground and I think we can achieve that if we all
28 act in spirit of what we intended to do which is work within a great allegiance. The
29 experts have all agreed to respect the guidelines of the Federal Court for experts and
30 that means acting in the interests of achieving the NEO and the NGO and I think that's
31 important.

32

33 My role, as Cristina outlined, is as a facilitator, it's to manage the mechanics of the
34 session. It's to identify those areas of agreement and disagreement. It's not my role to
35 have a view, it's my role to facilitate your views to come out and expose the areas of
36 agreement and disagreement. So I will ask questions to clarify. I may challenge and I
37 may invite other experts to give a response. We may get agreement with some issues
38 here but as everyone's aware after this session I will be working with the experts to
39 produce a joint paper of the positions which we can reach in terms of areas of
40 agreement and disagreement on the subject matter.

1

2 So the process is as Cristina has outlined, I will be asking everyone to make a short
3 opening statement, a maximum of two minutes and in order to help facilitate it, to make
4 sure it keeps time I'll raise a warning signal saying one minute 30 when we're nearly
5 there and when you're out of time we'll have a two minute signal. So that's just to
6 make sure that we do keep to time for the first 15 minutes. Then a session each of a
7 range of topics which is set out in the timetable you've all got. I won't read them
8 through now but we're starting through with some foundation issues, moving through to
9 risk and gearing and then a few extra issues on financial performance. As Cristina
10 said I will ask one of you to kick off each session with some remarks. That's just to
11 provide a starting point for discussion, it doesn't give priority to that expert's views and
12 after that in each session all of the experts will have an opportunity to give their views
13 during the course of that session and one of my roles is to make sure that every expert
14 does have an opportunity to express those views.

15

16 Before we move on to start just a word on approaching the task. In advising the AER
17 we are helping them to be confident that their decisions are the best way to satisfy the
18 National Electricity and Gas Objectives. At the moment that means the Allowed Rate
19 of Return Objective, or of course whatever may replace that. So I think it's important
20 that we think through have we put ourselves in their shoes in thinking through how we
21 move to apply the new guideline, develop a new guideline for those objectives. I note
22 there's a few issues to think through there. First of all, why is it is in the interests of
23 consumers for the rate of return guideline to be set that relates to capital market
24 returns. It's obvious to economists and financial people I think but I think explaining
25 how that links to what's in the long-term interest of consumers is helpful.

26

27 Secondly, if we were the board what would really make us confident that the rate of
28 return guideline was going to deliver the right returns? Yes, it is in the detailed
29 estimation processes of the parameters of beta, gamma, theta and we need to be very
30 diligent in applying ourselves to the detailed estimation so we need to make sure that
31 we're using the best evidence for those. But I think it's also important to reflect and
32 take a step back and look to see if we can answer and be confident that, in the words
33 of economist John Maynard Keynes that the result is roughly right and not precisely
34 wrong. If we put ourselves in the shoes of the board, that they need to be confident
35 that the result really does represent the opportunity cost of investment in the Australian
36 Energy Network industry, not more and not less.

37

38 Thirdly I think it's important to think through well what has changed since the last
39 guideline? So things have changed in the financial markets, things have changed in
40 the energy market and along with the board it's often helpful to think through what's
41 changed in the world and the environment in order to justify making a change to the
42 existing guideline. So as we work through today's agenda and the issues in the next
43 agenda it's helpful to be mindful of those objectives.

44

1 With that I will now move onto opening statements and I will put the order of opening
2 statements in the same as the order in which the experts are going to reduce sessions
3 later on today. So I will first of all call on Greg Houston from Houston Kemp to make
4 an opening statement of two minutes, thank you.

5

6 MR HOUSTON: Thanks. So the topic is the allowed return and in the synthesised
7 agenda that we've got there are four issues. Implications of the draft legislation, will
8 the guideline be evolutionary, should the foundation model as applied in 2013 be
9 continued or abandoned and the fourth one is the circumstances in which the guideline
10 might be reopened. I don't propose to say much at all in relation to the draft legislation,
11 I believe it's actually probably more helpful to hear from the board on how it sees the
12 implications rather than providing my view.

13

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

25

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

29

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

31

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

42

1 People talk a lot about change in risk will lead to a change in cost of finance and I think
2 that's pretty clear. But one area that I always think about is the future of energy
3 markets are going to evolve, in some ways we have identified and others that we don't
4 know. The best interest of consumers involve innovation where possible and having a
5 vibrant stable foundation for the rate of return I think is critical to that.

6

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

13

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

16

17 ASSOC PROF PARTINGTON: Okay. I'll try and be brief, although I have a life
18 devoted to excess. I hope I will be forgiven if I state the obvious, but long experience
19 has taught me that stating the obvious is often valuable.

20 Any regulator is invariably faced with opposing points of view in the submissions
21 received, and that's to be expected. Even with the very best will in the world there's a
22 natural inclination to take the case that favours self-interest as being the truth. So what
23 you're going to hear from the regulated businesses is the return should be higher.
24 They will say the risk-free rate is too low, the equity beta is too low and the market risk
25 premium is too low. You're using the wrong asset pricing model; you should be using
26 one that gives a higher rate of return. They'll also support the cost of debt being based
27 on full trailing average.

28

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

36

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

41

1 However, the task is not to balance competing demands; it's to do the right thing
2 according to the objectives and the rules. There's one thing that will achieve that and
3 that's that you should have zero NPV investment activity because it's got two
4 important properties. First, you cover all operating costs and relevant taxes, you repay
5 the capital invested and you give the investors the return they require from the residual
6 cash flow. Second, by definition, a zero NPV investment offers no economic rents.
7 You're not exploiting market power. The incentive for investment is just right,
8 encouraging neither too much investment nor too little.

9

10 Ex ante, the investment will earn the return investors require at the time the investment
11 is undertaken and the market value of the asset should equal the RAB. All that's
12 achieved if you set the regulated return equal to the weighted average costs of capital
13 based on the current cost of equity and the current cost of debt, which in turn reflects
14 the risk of the underlying asset. Unfortunately, using a trailing average cost to debt will
15 only result in these desirable outcomes by chance.

16

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

18

19 DR MIRRLEES-BLACK: Thank you. David Johnstone.

20

21 PROF JOHNSTONE: I'll go back one step deeper than Graham. I was first involved in
22 this probably more than 20 years ago and I've watched from the sidelines a lot and I've
23 just been amused, basically, at how long the to-ing and fro-ing has gone on, and we'd
24 all stay the same. You know, it was the perpetual cat and mouse game and it gives
25 me the feeling of sophistry and basically an industry of itself, and I think the regulators
26 need to step back a bit and just think from fundamentals what's going on. Now,
27 fundamentally, these entities have no independent existence. They can't be separated
28 from the regulator's decisions. So the regulator decides whether highly-profitable loss
29 makers, engineeringly efficient, whatever. So that makes the issue extremely
30 complicated and difficult. I can, therefore, see why a framework has been invoked, the
31 financial theory framework, but there's all sorts of questions over that framework, both
32 in its own theory and in the way that it's actually shoehorned and abuse and
33 misinterpreted for the convenience of whatever the argument that we want. It's a
34 so-called market for excuses.

35

36 I think hearings like this are wide open to this market for excuses where despite all our
37 testations about the independence of us as experts, it's a natural human tendency to
38 actually take a side and as a result we could end up with a mismatch, and we probably
39 have in the past, because Australia just doesn't have the manufacturing base to argue
40 for lower energy prices that, say, a country like the US has, and governments owned a
41 lot of these assets as well and wanting to privatise them for big proceeds. So the
42 incentive of government was to actually inflate the revenue stream to the new owners.

43

1 There's so many conceptual questions I think are just completely washed aside once
2 we get involved in the minutiae of the whole thing. The CAPM framework is supposed
3 to be the be all and end all, but if that was the case, all these little biddy things that
4 come up and the documents are this thick, and they're overwhelming, they would all be
5 solved under the CAPM. The CAPM would be a corollary. It just doesn't happen.
6 Instead it ends up in ad hoc argument. One expert argues on an inconsistent basis for
7 the same thing in favour of one side on different points. So that was the frustration that
8 put me off the thing years ago. It's not a very satisfying process, I must say,
9 intellectually.

10

11 I think I've said enough. I will just give you some specifics. You take something like
12 the regulatory asset base. These assets, from the day they're bought they're sunk. So
13 the regulator could value them anywhere between nought and infinity, anyone on the
14 real line, and so where the regulator values them will depend on the regulator's own
15 decisions because the regulator watches the market to see how the entities are
16 performing, and the entities are performing in the market according to the regulator's
17 decision. So we've got this circularity which is sort of like Lewis Carroll. You know,
18 we've got that Alice in Wonderland feel about it, which is very, very off putting to an
19 outsider. I'm merely an outsider now. It's disappointing because it's such an important
20 thing and there doesn't seem to be any easy natural solution. I know we need a
21 framework and I know in that kind of circularity you end up with an equilibrium, but the
22 question is, is that equilibrium going to be one - am I finished?

23

24 DR MIRRLEES-BLACK: Yes, over.

25

26 PROF JOHNSTONE: I thought you were giving me two minutes. I was just getting
27 started.

28

29 DR MIRRLEES-BLACK: That's all right. Thank you very much. There's more
30 opportunity in the following discussion to expand on the points that you've raised.

31

32 Stephen.

33

34 PROF GRAY: I think the centre point of the day should be the NEO and the NGO. So
35 one thing that we might all agree on, and I think Graham has said that, is that if we set
36 the allowed return equal to the return that investors actually require, no more, no less,
37 then that would be in the long run interests of consumers. So that creates the correct
38 incentives for investment and, importantly, the incentive for investment in innovation,
39 which is going to be really important over the course of this guideline.

40

1 I've written here that I thought we might be ab le to reach agreement on gearing and
2 the allowed return on debts. Maybe that was optimistic. If that's the case, then, really,
3 the focus of these sessions will be on estimating the allowed return on equity and given
4 that it's to be an incremental review, and we retain the foundation model, where the
5 Sharpe-Lintner CAPM is informed by evidence from the Black CAPM and the dividend
6 growth model, if we maintain that, then the question is how does the AER best go
7 about estimating the required return on equity within that context.

8

9 So I think over the course of this session and the next one, it would be useful if we
10 bear in mind two principles. So one is that all risks should be addressed somewhere in
11 the regulatory framework. I don't think anyone would argue that network investment
12 has become, and is becoming, less risky since the last guideline. So I think it's very
13 important to ensure that risk is addressed somewhere in the framework. So that might
14 be in the equity beta, it might be in the insurance premium in Opex allowances, or it
15 might be by setting the allowed return so that after taking uninsurable risks into
16 account, the expected return is equal to the CAPM estimate, But I think the bottom line
17 is that we should be able to point to where each risk has been dealt with and identify
18 what effect it's had on the regulatory allowance.

19

20 Then the second principle, I think, relates to the use of market data. The question is
21 do we think that market data, on average, reflects the returns that investors actually
22 require. So if we do, we can use that data in our process of estimating those required
23 returns and, if not, we're in big trouble. We have to rely on the vibe or something of
24 that nature. So the obvious example of that is going to be in relation to low beta bias
25 where market data consistently shows that low beta stocks earn higher returns than
26 the CAPM suggests. I think we need to identify whether we think that's because
27 investors have priced assets to achieve a higher return than the CAPM suggests, and
28 that's what been achieved on average, or whether we think that's because investors
29 have just lucked out year after year for 50 years in every developed market.

30

31 So I think if we bear those two principles in mind, then the best way to achieve the
32 NEO and NGO is to obtain the best possible estimate of that required return on equity,
33 which I think is the efficient financing costs of the benchmark efficient entity, and I think
34 bearing those two principles about consideration of risk and how we're going to use
35 market data will help to produce the best estimates.

36

37 DR MIRRLEES-BLACK: Thank you very much, Stephen.

38

39 Thank you, experts, for those opening remarks. We will now move on to the first
40 session, and the first session is going to be 45 minutes or so, and there may need to
41 be some flexibility in this, and depending on the debate, but our plan is that 45 minutes
42 we will be talking through from the foundation principles and, perhaps, implications of
43 the evolving legal framework and we will then move on to useful judgments for
44 30 minutes after that.

1

2 So I ask Greg Houston to kick-off the discussion on this topic, please.

3

4 MR HOUSTON: I apologise. My previous opening remarks were in what I thought
5 was in relation to that first session, so I'm not sure I need to add much more other than,
6 perhaps, just to remind ourselves that there are four topics under that first one. That's
7 sort of set things off, really, in the implications of the draft legislation that is sort of out
8 there that will govern the future finding, rate of return and whatever implications that
9 might have for the development of the guideline.

10

11 I think the most important thing about that legislation, it seems to me, is that the
12 guideline to comply with that legislation must have values or, if I can recall it correctly,
13 a way of calculating relevant values that is automatic and involves no discretion on the
14 part of the relevant regulator. I think if we're to turn our minds to the implications of
15 that, that seems to me the most important place to focus.

16

17 I think it would be likely, it seems to me, that the current guideline in its form would,
18 perhaps, not meet that standard and so the question arises as to how things will need
19 to change for it to do so. I know also that the legislation sort of takes away the
20 benchmark efficient entity and the rate of return objective. I'm not sure that makes
21 much difference to what we're actually talking about. That would be an interesting
22 question, perhaps, to discuss whether there are any tangible implications of those quite
23 specific objectives and their removal.

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

26

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

33

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

1

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

8

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

14

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

19

20 PROF JOHNSTONE: I agree with Graham that we can't start again. Although, you
21 know, if the regulatory decisions were bad enough, that's what happen. You know,
22 there would be massive dysfunction and we would start again one way or the other, but
23 incrementally, the danger is inertia, a kind of anchoring where the numbers like the
24 current will have to become fixed in our head and we find it very hard to deviate too far
25 off them, and logistically, the positions in the arguments become our anchors as well
26 and so we get into a kind of a group-think. That's why I'm constantly suggesting that
27 we've got to think back to fundamentals all the time about what the task is and, you
28 know, think of the assets themselves. The point that Graham Partington made is that
29 it's easy to get hung up on a securities market rather than think about the fundamentals
30 of the assets themselves. So when we're talking about risk, you know, in finance
31 textbooks, the risk of the cash flow is coming from the assets, not the risk of the
32 securities or the interpretation of things, so thinking back to fundamentals, just how
33 fundamentally risky are these cash flow streams coming from these entities. That's the
34 basic question that should be asked all the time.

35

36 MR SADEH: I just add from an investing mindset, if your goal is to have something
37 that effectively is as cost reflective as you can of capital that goes into an asset that is
38 not favouring it one way or another, capital decisions are long term. They're not made
39 on the basis of textbook theory, like every five years all of a sudden the capital
40 structure will be totally refreshed. If there's something that distorts it away from a
41 market cost position and the way that you make those decisions, that's an increased
42 risk and you bet people starting to make distortive decisions of their own, and that's in
43 nobody's interest to try and chase risk in capital structure to try and shoehorn back into
44 the return that you're given instead of the return trying to reflect what the most prudent
45 form of capital structure could be. So when you're talking about networks that have

1 multi-billion dollar facilities, they're not capital structures that are instantly reset all the
2 time. I mean, that's why to me the existing framework with trailing averages for
3 example makes a lot of sense because in practice there's no way I could ever go and
4 do all my hedge book on one day. It would cost you a fortune. It would expose
5 everyone to a lot of risk. It makes prices volatile. The reality is all CFOs in these
6 networks are continually and regularly refreshing parts of their capital cycle and I think
7 the existing framework does that.

8

9 Just on Greg's comment about the benchmark efficient entity concept, I also see that
10 as a really fundamental part together with the rate of return. I do see them operating
11 very similarly together because we currently have a system that's based on an
12 incentive framework and I think that's really important and really good, particularly, as I
13 said, as we're going into the longer term where consumers' best interests are going to
14 be served by, frankly, innovation rather than buggering around on a few points here
15 and there on return, which is important, but the real benefit comes from everybody
16 actually improving the underlying service efficiency, not by playing games with finance.

17

18 The benchmark efficient entity to me is the bridge between what is in the systematic
19 risks in your rate of return and the non-systematic risks in the Opex allowance that
20 you're given. I think that works really well and I think there would be a fundamental
21 issue if that was broken.

22

23 DR MIRRLEES-BLACK: So just to clarify, which responds to those two points, the
24 draft guideline removes that particular objective, the rate of return objective. Do the
25 panel members think that the rate of return guideline should bring that back in as an
26 interpretation of the national electricity objective and the national gas objective to make
27 it clear from where the parameter estimation flows?

28

29 PROF JOHNSTONE: Sorry, bring what back in?

30

31 DR MIRRLEES-BLACK: The definition of the rate of return objective, which includes
32 the requirement that returns need to be commensurate with what would be earned by a
33 benchmark efficient entity? Do panel members agree that that should be in the new
34 guideline - or something like it should be in the new rate of return guideline?

35

36 MR HOUSTON: Perhaps I could kick-off to that because I wouldn't want to be seen to
37 have left the impression that in my mind the benchmark efficient entity did not matter. I
38 think it's actually a very important concept, but I think - and so my short answer to your
39 question is, yes, ideally it would be encapsulated in the guidelines if it's to disappear in
40 the rules. I mean, quite how we've improved our life by taking it out of one place and
41 putting it in another, I'll leave others to judge, but I think just to sort of square that with
42 what I said before, I'm confident that the benchmark efficient entity concept can readily

be reconciled or derived from the NGO and the NEO, and the process for that is relatively straightforward in terms of the principles of good regulation, which is that I don't think it's very helpful - well, first of all, regulation in the interest of consumers should draw as much as possible on incentives for efficient conduct by regulated service providers, and the way that you can - the only way, really, I think, that you can achieve efficient conduct on the part of service providers when it comes to financing is for the regulatory framework to look through the financing, particular financing arrangements, that exists for any service provider and to approach capital structure and financing decisions on a benchmark basis.

Not to do that leaves a regulator in the position where it is starting to make judgments about financing decisions and I think that's a very risky place for regulators to be. It starts to ultimately lead to constraints on capital structure. It imports the regulator with some responsibility for financing decisions, and in the unlikely but not inconceivable event that a service provider was to make bad financing decisions and was to reach a position of financial strife as a result of that, then the regulator becomes part of the perceived problem that's developed whereas staying out of that and approaching capital structure and financing on a benchmark basis means the regulator can properly stand aside from those kind of troubles.

So I think that's the set of principles from which the benchmark framework is derived from the NGO or the NEO and I think they are really fairly clear why they are accepted principles. So quite what the wisdom is of withdrawing that from a legislative point of view is lost on me, but if it is to be withdrawn, I think it would be helpful for the guidelines to make clear that the rate of return is to be approached on the basis of a benchmark entity.

PROF GRAY: Yes. I think this is maybe one area that we can agree on, so that the AER, I think, has been on the record as saying they don't consider that the rules were inconsistent with the NEO or NGO and, in fact, the whole purpose of the AEMC making those rules, and the rule change in 2012, was to put some flesh on or some guidance on how one would best go about providing a decision that contributes towards the NEO and NGO. So I think it would be very helpful to include some of that material in the guideline. You know, it's one thing to say here is an allowed return and we think it's consistent with a NEO and NGO. I think it's much more helpful to say here's a set of considerations that we've made, and one of those, we're talking about the allowed return objectives so that the rate of return objective, so, as I said before, I think all that says is that what we should do is to strive to set the allowed return as close as we can possibly get to the actual return that investors would require from the market. To me that's what the ARORO says. That's what I said in my opening statement. Graham, I think, calls that same concept NPV zero. I think we're all in agreement that that's what the task is.

DR MIRRLEES-BLACK: Does everybody concur with that? Is that something that we can agree on?

1 ASSOC PROF PARTINGTON: We are in agreement.

2

3 MR SADEH: I wouldn't call it NPV zero. I'd be very clear about not calling it NPV zero
4 because NPV zero implies that we don't take any risk.

5

6 ASSOC PROF PARTINGTON: No it doesn't

7

8 MR SADEH: It depends how you set the rate of return to start with, the discount rate to
9 start with.

10

11 ASSOC PROF PARTINGTON: Well, if you set the discount rate to the risk-free rate, it
12 means you don't take any risk but not otherwise.

13

14 MR SADEH: Yes, that's true. So it does more underline the importance of getting the
15 rate of return fair and right to start with to be reflective of the risks that are being taken
16 because it's certainly not the case that there are no financing risks in multi-billion dollar
17 packages.

18

19 MR HOUSTON: I think NPV zero might be an arithmetic consequence of what we're
20 talking about. But I think it can be quite distracting as an objective and if I was to
21 encapsulate what I think we're talking about, it is that the allowed return should reflect
22 the relevant risks as applied to the expected value of the cash flows to which they are
23 to be applied in order to derive a revenue requirement. That is what the task is here.

24

25 PROF GRAY: That's exactly what I'm saying, and I think that's exactly--

26 ASSOC PROF PARTINGTON: That's exactly what NPV zero is.

27

28 MR SADEH: It is.

29

30 PROF GRAY: But Graham's just calling it something else. I think we have agreement
31 on the concept.

32

33 MR HOUSTON: My point is that NPV zero is a sort of corollary of that principle, but I
34 think it's more helpful to articulate the principle in its long form. The description of the
35 expected cash flow is what we're talking about, which is on expected value basis on

1 the one hand and, secondly, the allowed return that's consistent with the risks that are
2 encapsulated in those expected values. If you put those two things out there, then I
3 think that is something that we, I would hope, could all readily agree on.

4

5 MR SADEH: And the rules set that out, right.

6

7 MR HOUSTON: That's right.

8

9 MR SADEH: The allowed rate of return should be consistent with the benchmark
10 efficient costs, of the bench market efficient entity. That's the concept.

11

12 MR HOUSTON: The one thing that isn't clearly in the rules, at least so far as I can
13 recall, is the reference to cash flows being formed on an expected value basis. That's,
14 perhaps, implicit.

15

16 ASSOC PROF PARTINGTON: I think it's implicit.

17

18 MR SADEH: Can I say, I mean, to me, because I do agree with the principle and
19 maybe it's the semantics of discussing it, which is part of a broader point that I have
20 that in the current environment of moving towards a binding rate of return with the
21 removal of the effective limited merits review avenue and that's just the case. That's
22 something that we'll have to deal with. But, I think it does underscore the importance
23 of putting as much objectivity as possible and as much clarity for all the parties as
24 possible, in the guidelines. So, something about this that talks about reflecting the risk
25 ex post versus ex ante is extremely important. It's a very different position to have
26 investors take the risks around the capital structure and then have the return calculated
27 ex post. So, I hope that we're all talking in similar points, but I think the clarification, to
28 be reported and to survive through time is important for everyone.

29

30 DR MIRRLEES-BLACK: We may be nearly at agreement on this particular thing. But
31 David, you haven't made a--

32

33 PROF JOHNSTONE: I think the finance aspects of this discussion represent the kind
34 of riddles I was talking about, because you know, for example, Steve's notion of what
35 investors would require in the market - and that makes a lot of sense if the revenue
36 stream from these assets is actually determined by the market, but when it's
37 determined by the regulator, the regulator's wondering what will be the market's
38 reaction to its regulation, and we get into that perpetual circle. And, that's where the
39 confusion sets in and the room to go off on tangents and so on.

Secondly, I think the regulators should be highly interested in the financing decisions of the entities, because they reflect the motivations of the entities; the motivations which are embedded in the regulation. So, for example, now just simplistically, if the rate of return offered is too high and the entities therefore gear up and borrow and build assets to pocket from that spread, a bit like a bank, between the borrowing and lending rate, then the financing decisions are actually giving the game away, in that sense. So, to actually try to deflect the regulators' attention away from the financing decisions, I think, is going to take a bit out ofsomething that's very important.

And lastly, on the Benchmark efficient entity, both Greg and Ilan actually said things which I liked, and that was there was a kind of an engineering aspect to that. Now, I think in the dominance of financial reasoning in politics and regulation these days relative to engineering reasoning, we lose a lot of sight of just basic things like engineeringly good decisions rather than profit good decisions, profit making decisions.

So, these benchmark entities really, in the old days, would have been determined from an engineering perspective, in terms of things like future demand predictions, catering to technological change, all of those sorts of things. So now, you can very quickly lose sight of those aspects which are fundamental to the benefit of the economy and consumers and the suppliers themselves, if you get hung up on finance, especially if that finance takes us into these circles that I find so frustrating.

PROF GRAY: So, are you saying that the allowed return should be different from the return that investors would require?

PROF JOHNSTONE: Investors don't know what they would require until they know what the regulator's decisions are. So, for example, if a regulator grants a tariff stream, the investors look at that tariff stream and they appraise it and then they decide how much they'd pay for that. So, the regulator actually is market, in a sense; the regulator is determining the tariff stream, very largely.

PROF GRAY: So, is that no?

PROF JOHNSTONE: Is it no?

PROF GRAY: Yes, to my question. Should they set the allowed return equal to the efficient cost of finance?

1 PROF JOHNSTONE: Okay. So, you were saying if the investors can see the
2 regulatory decisions--

3

4 PROF GRAY: Well, we're here to sort of, assist the AER. So, what do we think the
5 AER should do? I--

6

7 PROF JOHNSTONE: I just want to get your question clear. What are you asking me?

8

9 PROF GRAY: So, should the allowed return be set equal to the efficient cost of
10 financing for the benchmark efficient entity?

11

12 PROF JOHNSTONE: There's no such thing, because the efficient cost of financing
13 depends on the characteristics of the cash stream. And, the characteristics of the cash
14 stream are determined by the regulator.

15

16 PROF GRAY: So, what do you say the AER should be doing?

17

18 PROF JOHNSTONE: Okay. So, that's the big picture, right? Yes. And so, what I'm
19 saying - I guess we've already touched on this - and that is that there is a framework in
20 place that's got all these finance anchors, like the CAPM and so on, and we've played
21 around and with different nitty gritty aspects of that, and possibly, it would appear that
22 it's not ridiculously long, because there's no revolt in society. On the other hand, there
23 is some political annoyance at the rises in energy prices. So, we get ourselves
24 involved in this rigmarole to produce a number which we might have been able to write
25 down in five minutes at the start of the day on intuitive grounds.

26

27 Now, whether that's of benefit or not, I'm not sure. I know it's an invitation to lobbying.
28 It opens up all sorts of opportunities for game playing and things that Graham was
29 talking about, and I can see that the regulators have got a pretty difficult decision in
30 trying to actually see where the sincere and genuine positions are and see where the
31 vested positions are.

32

33 DR MIRRLEES-BLACK: I think that there's an issue here - it is a question about what
34 we're actually doing here, but it seems like there's almost concurrence around the
35 concept of the Benchmark Efficient Entity, perhaps with reservations from David about
36 precisely how you define that. But, it sounds like in some of what you were saying, the
37 question is with reference to what, is the--

38

1 PROF JOHNSTONE: I would like to see more engineering content in this notion of the
2 Benchmark efficient entity, and that comes down to stuff like future demand,
3 engineeringly efficient reaction to future demand rather than profiteering reaction to
4 future demand.

5

6 DR MIRRLEES-BLACK: Okay, thank you.

7

8 MR SADEH: Can I just ask - because I agree that all aspects of the business needs
9 should be done, and to me, as is said, a lot of the time, I personally don't think that
10 there should be too much - too much of a - of a spectrum of different views around the
11 rate of return guidelines. I think particularly efficiency decisions are more things in you
12 know, the Opex allowance and things like that. How do you see the engineering
13 decision actually factoring into risks that are traditionally done in the rate of return? I
14 think about things like new technology, climate change.

15

16 PROF JOHNSTONE: I totally agree, and I think in the end - so, for example, when the
17 market actually evaluates these revenue streams, which are regulated, then the market
18 would actually be taking into account those things as well and pricing those revenue
19 streams. So, there's no doubt that you know, the engineering comes first, but then the
20 financial perception of the engineering solution - whether it's a good one, whether it's
21 going to end up with breakdowns or excess capacity or sunk assets or stranded
22 assets - that comes second. To me, the engineering aspects need to come first, and
23 they've been likely to satisfy the financial aspects.

24

25 DR MIRRLEES-BLACK: I think we've covered some of these angles.

26

27 MS CIFUENTES: Just a quick question for clarification. Ilan, did I hear correctly or - I
28 may have misheard - that you were saying that new technology, climate change and
29 other factors such as that should be included in the rate of return?

30

31 MR SADEH: I think it's an interesting question; like, you know, for some of these, I
32 don't think there's a totally clear cut answer. My view on it is the rate of return
33 should - you know, should fairly reflect systematic risk, which should effectively be
34 risks that broadly affect the industry and the broader market.

35

36 You know, the - in my view, the non-systematic risks that are in the Opex
37 allowance - and that's a little bit different to the way that investors look at their rate of
38 return, and I can come back to it, because that talks about the point that somebody
39 asked about why are investors returns looking higher than, you know, a regulated
40 WACC. It's because the non-systematic risks turn up in their total return. Your rate of

return is just on the capital you invest, not on the risk you take in the - in the operating cash flows.

But, there are some elements - and let's take new technology - there are some elements of new technology change that are affecting the markets as a whole. And, I think that they should be reflected in the rate of return. There are really specific elements to new technology that are outside that.

MS CIFUENTES: I think we're actually going to go back to that point.

DR MIRRLEES-BLACK: We have jumped ahead.

MS CIFUENTES: Yes. And, I just wanted to make sure I hadn't misheard.

MR HOUSTON: Well I think, just to be - perhaps square off some of the perspectives here when we're coming back to this - is that Stephen said all risks should be addressed somewhere and I agree with that. I think that perhaps that's something we all agree on, and there is some question about whether only systematic risks are being dealt with in the rate of return. That's okay, providing all other relevant risks are addressed somewhere. So, A is okay if B is present. And, I think that's probably the--

DR MIRRLEES-BLACK: I think that's probably fair, and I think we'll cover the allocation of discussion of risk later in the session after morning tea.

ASSOC PROF PARTINGTON: Can I just make a comment about Benchmark efficient entities; that was what we were discussing?

DR MIRRLEES-BLACK: Yes.

ASSOC PROF PARTINGTON: It's not clear to me what the efficient financing structure is, of a Benchmark efficient entity. And, in my view, the choice of financing structure is best left to the entities themselves. The observation was made here you can't rebalance every five years, and that's not what's assumed in finance textbooks and it's not what's assumed by using the current cost of debt. Some firms do make the choice to hedge; it's a choice. You don't have to do it. And, some firms don't do it. Let's not get too side-tracked.

1 There seems to be general agreement the ratio is 60percent And, much to my
2 surprise, nobody's questioned that. I find that very surprising. It makes me think that
3 somehow, that might be too generous. But--

4

5 DR MIRRLEES-BLACK: We'll come back to gearing later. We have a whole session
6 on it. So, just to move onto another issue which maybe we can have some agreement
7 on - and that's the foundation model--

8

9 MS CIFUENTES: Sorry, Jonathan. Before we do go on that, can we just ask for some
10 quick views? Graham made a couple of comments around some of the benefits or
11 otherwise or disadvantage of whether you actually have fixed numbers or a
12 methodology. Can we get a quick view from the experts on whether the rate of return
13 guidelines should actually have fixed numbers or - and Stephen suggested a couple of
14 options. But, just your view. And, Graham, I think you said that there was an
15 advantage in terms of price on certainty but it also captures and sets it in stone for five
16 years. So, can you just tease that out a little bit more, please?

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

18

19 MS CIFUENTES: No, we've got yours.

20

21 DR MIRRLEES-BLACK: Your view's been expressed already.

22

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

28

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

34

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

1

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

7

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

16

17 So, I'm in favour of the longer term decision being gearing being a fixed number. Now,
18 obviously you could look at that at each regulatory cycle, if there was a major change
19 in the data, I wouldn't say just because it changed in the last five years, you
20 should change it again. The cost of the finance is a different thing because that is
21 something that is regularly refreshed and is a function of market that isn't distorted by,
22 you know, stock markets on cost of debt, for example.

23

24 DR MIRRLEES-BLACK: So, there will be some variables you'd say it is appropriate to
25 fix and some variables where--

26

27 MR SADEH: And that's gearing.

28

29 DR MIRRLEES-BLACK: -- and other variables or parameters that you would be
30 comfortable with a formula?

31

32 MR SADEH: Yes, and quite frankly, I think the current methodology, there are some
33 points around, the averaging period on cost of equity, et cetera. But largely, the
34 current formula works, makes sense and I think - you can't say it most accurately
35 reflects the way that everyone does things. I mean, as we said here before, there are
36 different investment structures and different investment types. But as a whole, I think it
37 reflects the fact that that is a dynamic decision.

38

39 PROF JOHNSTONE: I think the question that Christina asked is a perfect example of
40 how the regulator actually determines the nature of these income streams. Now, this

1 choice between fixed numbers and a methodology is actually a point of principle that
2 will affect the nature of these cash flow streams. And, it's a really simple example of
3 how the regulator actually decides things. Steve talked about the risk free rate lottery
4 that exists in - if we don't have fixed numbers even for the risk free rate, and that's true.
5 And again, that's exactly how the regulator affects the statistical characteristics of
6 these cash flow streams in making decisions on things like that.

7

8 Just as far as, you know, what I prefer, I mean, I would think fixed numbers have got
9 obvious benefits for simplicity, certainty, things like Steve mentioned, versus
10 methodology. Well, it just depends on the methodology. And, the methodology
11 actually - well that's really one of the reasons why we're here today, I suppose.

12

13 DR MIRRLEES-BLACK: Graham, do you want to--

14 MR HOUSTON: I think this is a very difficult area and it's - as Stephen said, and I have
15 already agreed there's quite a wide range of choices there. I mean, you could even fix
16 an equity return in value terms and link that, if you wanted, to some measure of
17 inflation expectations, if you want to have that varying by sort of, macro-economic
18 circumstances.

19

20 So, you have - you know, the problem in this area is that we're being asked to fix
21 market variables when markets vary and you know, frankly, it's not really for this forum,
22 but I think the proposed amendments are very unwise and if you - I was in the room in
23 2006 when the rules were developed to fix parameters around the rate of return at that
24 time, and the GFC within two years saw to folly of that, and I think there's some
25 significant risk here that we may see history repeating itself. Not that I predict a
26 financial cataclysm but I think it's important to be mindful of how the - where you end
27 up or would stand up in that context.

28

29 So, I think the answer to what should be fixed and what should not be - bearing in mind
30 what you may have to do - does need to be - there's some broad choices, and those
31 choices will then guide you as to what can be values and what can be some kind of
32 market-based variable. But, you cannot forget that markets change.

33

34 DR MIRRLEES-BLACK: Could you set out criteria for what the AER should fix and
35 what the AER should allow to vary; the criteria for the choice? That might help the
36 discussion or it might be that it's easier to--

37

38 PROF GRAY: We could go through it now. I could get you a list. I think the risk free
39 rate, that has to be a market rate, a variable; that's objectively determined. I don't think
40 there's any problem with that. The equity beta is something that's going to change
41 very slowly. The true systematic risk will change very slowly over time, so that's
42 something that can be fixed for the guideline. The gearing would be something that

1 will be fixed for the duration of the guideline, for the same reason. That's unlikely to
2 change materially over time very quickly.

3

4 The allowed return on debt is bedded down, I think. You've got a process in place for
5 updating the trailing average allowance. I think that's all fine. And then - so, that
6 leaves the market risk premium. And, my personal view is that it's somewhere
7 between the two extremes. So, I don't think the market risk premium is constant. I
8 think that's a silly extreme at one end. And, I don't think the total return on equity is a
9 constant number, and I think that's silly at the other extreme. I think it's somewhere in
10 between.

11

12 So, you - the AER is then constrained under the draft legislation to try to work between
13 those two inconceivable end points to produce an approach that gives an allowed
14 return that's mechanistic. And so, the kind of example that I laid out earlier is one way
15 of going, sort of, halfway between those two sort of, theoretical end points.

16

17 MR HOUSTON: And, I would agree with that assessment on the list.

18 DR MIRRLEES-BLACK: Any other views on that assessment?

19

20 MR SADEH: I agree as well. I mean, equity is a longer term instrument than debt
21 generally. So, as Stephen said, the risk parameters that the market faces in equity can
22 change from time to time, the expected risk on that can change from time to time, but
23 it's much more gradual than debt.

24

25 I mean, if I look at the way that independent valuers have approached things - a lot of
26 unlisted investors require to have independent valuations regularly; every six months,
27 every 12 months - not all but some. The independent valuers tend to follow a similar
28 CAPM approach and the market risk premium - while risk free rates have gone up and
29 down like yo-yos in the last ten years, the market risk premium very rarely changes
30 across asset classes.

31

32 DR MIRRLEES-BLACK: Graham?

33

34 ASSOC PROF PARTINGTON: Well, I think Stephen's comments are sensible. I have
35 two exceptions. One is yes, you know, one might fix the cost of debt but currently,
36 we're using the wrong process to get that cost of debt. So, I'm not in favour of fixing
37 the wrong number. What you want is the ex ante cost of debt; ie, what required return
38 on debt do investors want right now, not what did they want back during the GFC or
39 what did they want five years ago. So, that's the first thing.

1

2 I agree that the market risk premium does change. It's just extremely bloody difficult to
3 work out what the number is. It's very difficult to precisely estimate the change. Your
4 argument is it doesn't change very much. I think it's probably fairly stable, but it does
5 shift from time to time, I suspect, and particularly when you have extreme volatility in
6 markets or very low volatility in markets. The problem is measuring the change. That's
7 an intractable problem,, so I can't offer you a solution.

8

9 MR COX: Jonathon, could I just ask a follow up question? Thinking ahead, this
10 guideline is going to last for a number of years into the future. One of the things that
11 could happen - I'm not going to say would happen; it could happen - is we move from
12 low interest rates to high interest rates. If we were to do the sort of fixing that
13 Stephen's talking about, how would we fare if there were to be a large increase in
14 interest rates? Would there be a problem with lending?

15

16 PROF GRAY: Under my approach, that would roll through in a trailing average
17 calculation for the allowed return on debt, and that's something that's perfectly
18 implementable and hedgeable by businesses. And, that trailing average allowance
19 also smooths the price changes that would confront consumers. So, that approach, I
20 think, on the cost of debt, is fine if interest rates move in either direction. It's
21 symmetric.

22

23 In terms of the allowed return on equity, if broad interest rates increase - so
24 government bond yields go up - then under that sort of, 50/50 approach that I
25 described, the allowed return on equity would go up 50 basis points for every increase
26 in that government bond yield. The other ways of doing it, if you fixed the allowed
27 return on equity as a fixed number and interest rates increased or decreased, then that
28 would not change at all. And so, you do have the problem that you could get some
29 dislocation between the allowed return and market realities.

30

31 And then, if you fix the market risk premium, then of course, every change in
32 government bond yields will flow through one to one into the allowed return on equity,
33 so that creates more volatility in prices and allowed returns.

34

35 MR SADEH: I'll just comment there. In say, the debt component, there are costs of
36 debt that reflect things going back ten years quite easily. I mean, some of the
37 networks are quite new but I know for some of the ones that I'm a part of, they'll have
38 debt in 17 years that has a fixed rate margin. So, I think the trailing average - it's good
39 that it also provides stability in price path, but I think it also does reflect, you know, the
40 capital structure there.

41

1 ASSOC PROF PARTINGTON: The trailing average is like giving your builder a costs
2 plus contract except in this case, the interest rates is the plus. If you gave a corporate
3 treasurer anywhere out in the commercial world, the opportunity to have a guarantee
4 that his revenue stream would cover the cost of his historic financing, he'd snatch off
5 your hand off.

6

7 MR HOUSTON: I don't think that's right, actually. I mean, the issue with a builder
8 having a cost plus contract is that what the builder, him or herself, does will flow into
9 the cost. But a trailing average does not in any way connect with the end decisions of
10 any individual treasurer.

11

12 ASSOC PROF PARTINGTON: It's a substantial incentive to try and be more efficient.
13 ..(not transcribable)..--
14

15 MR HOUSTON: It's only set on a market benchmark.

16

17 ASSOC PROF PARTINGTON: I mean, you can pick a financing structure, but it
18 doesn't matter that much if it's not quite right as long as you just follow the AER trailing
19 average benchmark.

20

21 DR MIRRLEES-BLACK: I think there's specific issues in terms of the trailing average
22 and the debt. I think we need to allow time at some point within the sessions to
23 explicitly look at that as a later point, but I think there's only - there's only one point for
24 David to answer on in terms of the plan, which is do you have comments in terms of
25 the issue of what should be fixed and what should be varied in terms of the
26 parameters?

27

28 PROF JOHNSTONE: Are we back to that point?

29

30 DR MIRRLEES-BLACK: Yes. because, I don't think you managed to interject on that.

31

32 PROF JOHNSTONE: No. I've got no strong perspective on that, because I don't think
33 there's any clear answer to that.

34

35 DR MIRRLEES-BLACK: Okay. Fine. Just one further thing before we move on
36 there - and it may be that this is a quick yes; it may not, but hopefully it is - I think we're
37 at general acceptance that this is an incremental review, that the foundation model

1 which was used in the 2013 guideline should be the basis for the next guideline. Is
2 there general acceptance of that particular statement or not?

3

4 MR HOUSTON: Well, I think there's a foundation model framework. I think the
5 framework's quite important because the foundation model imports considerations from
6 other models and that - Stephen, I think, mentioned it before - the Black CAPM
7 perspective in addressing the low beta bias and also some consideration of the forward
8 looking DGM model. So, I think - - I'm in no doubt, we're going to come to, at some
9 point, words on a page that we're trying to agree to, but I think we just need to be
10 mindful that when we talk about financial foundation model, it's a framework that has a
11 foundation model and it's sensible.

12

13 DR MIRRLEES-BLACK: And, the way it's been implemented in the guideline--

14

15 MR HOUSTON: Yes.

16

17 DR MIRRLEES-BLACK: --is that it's a framework and each model enters in particular
18 ways with decision points.

19

20 MR HOUSTON: Yes.

21

22 DR MIRRLEES-BLACK: I think that's fair to say, that it is a framework. Any other
23 comments on the framework, the generic framework?

24

25 PROF JOHNSTONE: I think we have to talk within some framework. You know,
26 communication requires the same language, but there is - there's a lot of room for
27 considerations that would arise under other frameworks to come into this framework.
28 So, in a way, it's just limiting our words that we're using, I think, rather than limiting
29 necessarily the perspectives that widely.

30

31 DR MIRRLEES-BLACK: Okay.

32

33 PROF JOHNSTONE: And, we have to do that.

34

35 ASSOC PROF PARTINGTON: Well, in that framework, we've got the dividend growth
36 model. Unfortunately, I think if we want to use a dividend growth model, we need to

1 consider the impact of alternative terminal value assumptions in those dividend growth
2 models, plural. For example, I can you know, go to the web and find an estimate from
3 the DGM from a commercial service that'll tell me that the market risk premium is four
4 and a quarter per cent, while submissions from much of the regulated businesses are
5 that it is more seven, seven and a half, also based on the DGM.

6 So, the problem with the DGM is it's very gameable, depending on what you make your
7 terminal value assumption.

8

9 DR MIRRLEES-BLACK: Okay, I think that's all.

10

11 PROF JOHNSTONE: Jonathan, there was points raised about market estimates of
12 Beta. That will come up later, obviously?

13

14 DR MIRRLEES-BLACK: Yes, in the later section, I think we'll be talking about it.

15

16 PROF GRAY: And the market risk premium?

17

18 DR MIRRLEES-BLACK: And the market risk premium will come in the return on equity
19 in session 2. So leave that for the time I think, yes.

20

21 PROF GRAY: Are there any other questions on these issues?

22

23 MS CIFUENTES: No, thank you - that was very helpful.

24

25 DR MIRRLEES-BLACK: Thank you very much. We'll be writing up all the detail in the
26 paper which will come out in future. I'll now move to the issue of judgment, and if I may
27 I'll ask Ilan Sadeh to give an initial few thoughts as to what might be helpful to discuss.

28

29 MR SADEH: Thanks. One of the points I mentioned in my opening remarks were I
30 think there can be a search for false precision when we're looking to identify what is the
31 most robust methodology. There is a cost any time you change because you think
32 there's an incremental difference in thinking on reducing certainty and I think it's a
33 really important point because it flows directly into the use of judgment. Anything that's
34 arbitrary, opaque, or inconsistent - even if that's not the intention, it raises the risks
35 associated with investments and the concerns that I talked about earlier. Particularly in
36 the context of binding return guidelines which we understand that this is going to
37 happen, but therefore the additional point that should come with it, is greater

1 objectivity, and greater clarity. Now, when you talk about extra room for a judgment,
2 that might itself kind of sound innocuous, but I can tell you what words - what that
3 strikes me as, as an investor because it's easy to say, "We should have, you know,
4 judgments to take into account circumstances that we don't know are going to
5 happen." But we need to balance dealing with low probability events versus leaving
6 the door open to change parameters that, quite frankly, shouldn't be changing readily.
7 You hear innocuous - let's have some judgment discretion; I hear - backdoor
8 discretion, and, as I said, even if that's not the intent of the parties, it undermines
9 confidence in the overall process, and that's something that we should be really wary
10 of. At the same time I'm not so rigid that I think, you know, nothing should ever
11 change, and there should never be any discretion - that's just unreasonable, but I think
12 that discretion needs to be really tightly defined as to when it can be used; how should
13 there be any checking or input into the use of it so the rules of the game aren't just
14 effectively overridden when it suits.

15

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

17

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

23

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

27

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

33

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

38

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

42

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

2

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

9

10 MR SADEH: Yes. Because I think judgment can combine elements of identifying a
11 methodology, or a data set, and then using that data set. And there are low probability
12 events that, you know, in the current Opex allowances can be re-opened, as they're
13 tightly defined, so, yes, I think it's important to have something that you can take into
14 account - low probability events, because they have significant impacts on different
15 stake holders. But you don't want to then allow for that through a catch-all. You know,
16 it's that phrase about a sledge-hammer to crack a walnut. If you're trying to deal with
17 an issue please tightly define it, so that discretion can be understood that we need to
18 take into account if there's GFC or if there's a material dislocation, or if there is a
19 natural disaster. Like the way that uninsurable events are dealt with in the framework.

20

21 DR MIRRLEES-BLACK: Any other thoughts on this?

22

23 ASSOC PROF PARTINGTON: I'm not clear about whether we've moved on to
24 questions 1, 2, 3, 4?

25

26 DR MIRRLEES-BLACK: We're at question 2(A) - Use of judgment.

27

28 ASSOC PROF PARTINGTON: My point is that in the discussion documents we
29 had - there were about a dozen questions which then got condensed down to a
30 somewhat smaller set?

31

32 DR MIRRLEES-BLACK: Yes.

33

34 ASSOC PROF PARTINGTON: So I do have specific points in relation to some of
35 those discussions points.

36

37 DR MIRRLEES-BLACK: Why don't you--

1

2 ASSOC PROF PARTINGTON: Okay. So one of the questions we were asked, is
3 whether the section on criteria in the 2013 guidelines seemed to be appropriate? The
4 answer to that, from my perspective, is, yes, but. Item 6, for example, is sufficient
5 flexibility to allow for change in market conditions. Well, under the legislative changes
6 that's obviously going to be potentially difficult, so that needs to be sorted out. Another
7 was based on criteria 4 - it was based on quantitative modelling that's sufficiently
8 robust, and not be unduly sensitive to errors in input estimation. Highly desirable;
9 extremely difficult. Because of course it depends on the magnitude of the error and the
10 input. And one might think there, that possibly one could also introduce a criteria, less
11 sensitive to the risk of gaming. Some parameters are easier to game than others.
12 Some models are easier to gain than others.

13

14 DR MIRRLEES-BLACK: Any other general points you want to raise where I can bring
15 in a specific question?

16

17 MR HOUSTON: Yes. I think there's some re-thinking needs to be done in relation to
18 the criterion 2(B) which is to promote simple over complex approaches where
19 appropriate. I think that seems to me like a call for simplicity without much guidance
20 on when simplicity is appropriate? There are, in many areas, quite complex issues,
21 and I don't think there's any respectable call for simplicity where that involves
22 compromise to the objectives, or the objectivity, of the data and the process. So I think
23 I would qualify the word "appropriate" or even just remove that criteria? Because I
24 think it allows you to go to places that probably the accountability for which is not
25 sufficient for an ideal process.

26

27 PROF JOHNSTONE: Are we on the judgment versus data?

28

29 MR HOUSTON: Yes.

30

31 PROF JOHNSTONE: I think the problem with the data is that there's so little relevant
32 data. There are so few listed entities, and so many issues in moving things like market
33 betas accurately, and then there are questions like, you know, how much of the value
34 of a market listed entity is actually it's regulated component, and how much is from
35 other activities. Because if we take the betas as measured across the whole entity
36 we're getting an average, and it may well be that the beta of the regulated tariff
37 stream - which in principle is very detached from market conditions, it is actually being
38 overstated. If we were to break the entity down into separate income streams, or into
39 separate assets, and value them each individually - which then was the correct way to
40 do it, then they'd all have quite different betas and they'd all have to be estimated, or
41 judged, separately. So in capital budgeting context, for example, betas are often
42 judged because there's no listed entity in some new tech venture, or example. So if
43 you read the text books you actually made subjective statistical judgments, and you

1 work out a subject beta for a new investment. So relying on market value, in this case,
2 now, where we've got so little, and it's not particularly related to regulated streams, as
3 compared to whole entities, that leaves you thinking you've really got to resort to
4 judgment.

5

6 PROF GRAY: I think you've got data, and you've got the vibe. And I side with data.

7

8 MR SADEH: I agree with that. I said, particularly - I'll just probably have to say this a
9 few times during the day - my concern about the rate of return becoming binding
10 means that to provide sufficient external confidence in the process - you know - to
11 have the temptation of saying, "I can subjectively make adjustments to factors." That's
12 warranted in some situations, but to be able to do it in others it can lead to more harm
13 than good. Data is always going to be imperfect. I'd never suggest that we should
14 absolutely rely on this data set because it perfectly reflects things, and there are big
15 limitations in listed data because there isn't much of it. The time series might be short,
16 but to me it's a better position than having a subjective overrider to it.

17

18 DR MIRRLEES-BLACK: There are two questions which come out of this discussion
19 which we might be able to consider further. I think firstly I'd like to pick up on Greg's
20 point which is the question is only fit for purpose 2(B). Simple over-complex approach
21 where appropriate and he's suggesting that we should remove that. Do others agree,
22 or not?

23

24 ASSOC PROF PARTINGTON: No. There's a well established rule called Occam's
25 razor which is where faced with two competing explanations, prefer the simple over the
26 complex. That goes back hundreds of years - widely adopted by the sciences.
27 However - however, it is true that sometimes you might need to divert from that
28 because as Einstein said, "Everything should be made as simple as possible, but not
29 more so."

30

31 MR SADEH: I have to say it's something I'd rather ponder a bit longer - I can see both
32 sides to it.

33

34 PROF JOHNSTONE: I'll just come back to my former point, and that is, I think you've
35 got to look at the fundamental nature of these cash flow streams to understand what
36 their data would be in principle, rather than put total faith in very limited data.

37

38 PROF GRAY: I'm not sure that criteria play a useful role - at all. So I think if you had a
39 set of criteria and then you could bring a piece of evidence in, and weight that piece,
40 objectively, anyone could bring a piece of evidence in - weigh it up against the criteria,
41 and then decide whether it's in, or out - then that would be a useful process. But I just

1 don't think that's possible in this kind of scenario. I think rather than have a kind of
2 broadly worded criteria that objectively you could not tell whether a piece of evidence
3 satisfies that criteria, or not. There's a big slab of judgment that's required. The much
4 more efficient approach would be for the AER just to set out how it thinks it can best go
5 about the estimation task for each parameter.

6

7 DR MIRRLEES-BLACK: And secondly, I think there's a question which raises in the
8 use of judgment - many have a preference of data over subjective evidence, or
9 qualitative - you might not say subjective, but more qualitative evidence. I really think
10 there's a question in terms of the data sets which are being used, and the issue has
11 already been raised here that the very low number of listed comparative here means
12 how reliable is the data from which those judgments are made if one's just relying on
13 Australian comparatives? I think that's been raised by David, and others may have a
14 view?

15

16 MR HOUSTON: Yes, I have a view on that - I think there's quite a good case study
17 for - definitely with the criterion 2(B) which is that - you know - we're down to three
18 listed entities - we've got a fourth not delisted long ago. That's a pretty limited set for
19 some of the judgments that need to assist some of the assessments that need to be
20 made. In New Zealand where they have only two listed entities - which is only one less
21 than us, there was no debate in the similar process for the comments submission. You
22 have to look to overseas evidence of beta, and I think it might have extended to
23 Australia, I can't recall? There's no debate that you need to look at the evidence of
24 overseas energy and stocks that were listed in order to inform the decision-making
25 about beta. Now, I think that is a good call, and that is - well, we can come to that
26 later, but I guess if it comes to the simple versus complex, I would worry that the
27 criterion 2(B) would lead to someone to say, "Well, it's much simpler to focus on only
28 three." It's more complex to go and not worry about what's happening overseas, and
29 that where appropriate this is a meaningless guide to making that decision. So I don't
30 have a problem with simplicity - if there's a simple way of getting to the right answer,
31 then I'm all for it. But I would rather defer to Einstein in the sense that there's no point
32 in having something simple if it's just wrong, or not as good as something that's more
33 complex.

34

35 MS CIFUENTES: So should the principle then be simple as long as complex is not
36 adding value?

37

38 MR HOUSTON: That's right. I think some reference to the ultimate objective, and your
39 ability to get there, would be fine.

40

41 MS CIFUENTES: Not simple because it makes the regulator's task easier?

42

1 MR HOUSTON: That's right.
2
3 MS CIFUENTES: But if the more complex process isn't actually adding value, then
4 you fallback to the proposition--
5
6 MR HOUSTON: Indeed, yes, so I would be comfortable if the "where appropriate" was
7 reworded somehow to reflect or make some gesture to what we're actually trying to
8 achieve here - which is the best market evidence of the allowed rate of return.
9
10 MR SADEH: I mean, on the point about overseas peers as an example, I hesitantly
11 support that in the sense that capital is global, and so it would be wrong to think that
12 investors only look at investing in Australian networks, and not in others. But you do
13 need to make sure that if you look at other investment jurisdictions that you are
14 comparing those that have similar regulatory positions - and there are quite different
15 positions around the world.
16
17 PROF JOHNSTONE: Yes, that's exactly right - and also that point about what
18 composition of the overall entity is the regulated part, and what's the unregulated part?
19 If it's more unregulated than regulated, then the data that you measure is not
20 applicable to the regulated part.
21
22 MR HOUSTON?????: Yes.
23
24 MS CIFUENTES: Sorry - was that considered in New Zealand though - when they
25 extended that?
26
27 MR HOUSTON: There was. There was quite extensive consideration of the choice of
28 the data set that was developed, and the weight that should be given to various
29 elements of it. So with regard to the extent to which they regulated, and other things
30 as well - and obviously the jurisdictions. I mean in New Zealand they extended it out to
31 Australia, the UK, and the USA, and I'm not sure if Canada was involved. And I think
32 there's obvious reasons for preferring those jurisdictions, and it was a process of
33 considering the appropriateness of the set that was ultimately developed for that
34 assessment.
35
36 MS CIFUENTES: And did that presumably, Greg, involve a degree of an exercise of
37 judgment by the regulator for the way in which we would compensate the different
38 regulatory frameworks - the proportion of regulated versus unregulated revenue?

1

2 MR HOUSTON: Yes. So there was a process and criteria established and of course
3 they involve judgment, and there were many parties, or a number of parties, who went
4 through and reviewed, and made representations on the weight, or what should be in,
5 and what should be out, and so on. And I think it was a good transparent process, and
6 of course there's no one magic answer comes from that, but I think it's a way of
7 expanding the set of data that's available. I think it is relevant. It may be less relevant
8 than purely domestic data, but it's not irrelevant. And though it's more complex, I think
9 it added value.

10

11 DR MIRRLEES-BLACK: Yes.

12

13 ASSOC PROF PARTINGTON: I think it's clear that three comparators is a very small
14 sample set. There is the question of representativeness, statistically speaking, your
15 standard errors are more. However, you know, I can see the attraction of going
16 overseas, but the cure may be worse than the disease. Why is that? Well, we've
17 referred to some of the issues, and differences in technology, in regulation, and
18 taxation and other things, and what we haven't mentioned is it raises the question of,
19 "What's the appropriate market portfolio ?" We just heard, you heard global capital
20 flow . So why should we assume that the beta for an American utility computed
21 against some American stock index is the appropriate market portfolio for application in
22 Australia? So, you know, that's an issue that would need to be addressed if you're
23 going to go overseas. Should we in fact be doing the whole thing against a global
24 index? Or should we combine the markets from which you are taking your
25 comparators, and compute betas with reference to that market? That's an open
26 question.

27

28 MR SADEH: I find it helpful sometimes to talk with some live examples about issues
29 that might create problems; issues that might make it easier to use. I'm not saying we
30 should compare Australia with the Nordic region, but they'd have extremely different
31 climate conditions which impact their networks, and their relative risk quite
32 considerably. US jurisdiction - certain markets have different onus on the regulatory
33 cycle, and they are quite different. So I think there is some rationale in looking at
34 overseas assets, but I think there should be quite a broad range of input from a variety
35 of people. I can take your point before about unregulated assets. And yes, they do
36 distort the overall beta, but not necessarily in a upwards or a downwards way. As an
37 investor, unregulated revenue in transmission is very different to distribution. I would
38 love to have as much unregulated revenue in transmission as I could, because I see
39 that as lower risk then regulated return because it's effectively at 20 - 25 year
40 lease - quite different to other things. So you just need to interrogate it much more
41 than you would in taking general Australian data.

42

43 PROF JOHNSTONE: I guess it's a really good example of the need to look at
44 individual cash flow streams piecemeal rather than overall averages. Because those
45 examples you gave show really drastically different statistical characteristics of both

1 cost and income streams, and to talk about risks you need to get down to that kind of
2 level - and again, that's an engineering level. Because these are quite separate
3 engineering activities, and they're rewarded in different ways.

4

5 DR MIRRLEES-BLACK: I think we could say that there's general agreement for
6 broadening the data which is used, and the justification for doing that is the subject of a
7 further conversation.

8

9 PROF GRAY: Just on Graham's point about adopting approaches that are less
10 gameable - so the approach in New Zealand has been to adopt a very large set of
11 comparative businesses - so I can't remember if it was 40 or 60?

12

13 DR MIRRLEES-BLACK: 70?

14

15 PROF GRAY: 70? And so arguments about company A; company B, should be in or
16 out because they're more or less regulated or whatever, just aren't made, because the
17 overall mean is not sensitive to their inclusion, or exclusion. If you have three
18 comparators, and we're thinking about maybe we can find another three that are very
19 close comparators overseas, then of course you have all the arguments about what
20 should be in, and what should be out.

21

22 PROF JOHNSTONE: There would be no such thing as close comparators necessary
23 because of the different regulatory regimes and climatic conditions and things across
24 these countries, so to think that you can find another three that are going to give you
25 the Australian answer?

26

27 PROF GRAY: But again, you have got to use the most relevant evidence that's
28 available - evidence or vibe.

29

30 PROF JOHNSTONE: Well, "vibe" is a bit of a put-down to judgment, and there's a lot
31 of room for the kind of fundamental considerations that Ilan was just giving us a
32 moment ago. Rather than a mechanistic kind of just get the numbers off the market
33 and take them as givens.

34

35 MR HOUSTON: I hear that, but one of the difficulties of those fundamental
36 considerations is that they themselves can involve a lot of judgment, and I'm not quite
37 exactly sure what you mean by "fundamental considerations", but beta in particular is a
38 market variable - it's something you need to estimate using market data, and in my
39 experience it's very, very difficult to estimate that by reference to fundamental cash

1 flows. By way of reason - you can think of things that might contribute in a positive way
2 to beta, or things that might contribute in a negative way to beta, but in Australia you
3 can get to the point that you can identify that, and that's a good way to think.

4

5 PROF JOHNSTONE: But beyond thinking about those things, and hypnotising, it's
6 helpful to have market evidence to rely on, I think?

7

8 MR HOUSTON: No-one doubts that, but I think to view it one way or the other is a
9 licence to produce the answer that you like one way or the other.

10

11 ASSOC PROF PARTINGTON: The other issue of course is the issue of
12 gearing - right? So we've got these betas - are we just taking a simple average across
13 70, or are we going to do something about gearing? Once you do something about
14 gearing it's very gameable because it depends on the gearing adjustment you happen
15 to use, and one gearing adjustment is probably not appropriate across all these
16 different places, because there are different tax systems. Incidentally, the AER view's
17 on adjustments is definitely wrong. I don't know what the right formula is, but the one
18 you've got is not right.

19

20 MR SADEH: Can I just go back Jonathan - in the first part of the discussion we had
21 where we identified the list of parameters where we think some are more longer term
22 by nature, and some are more shorter term. I think we touched on the market risk
23 premium should be something that - maybe it's a bit in between - it shouldn't be fixed
24 forever, but it also shouldn't be something that just fluctuates every time you run a five
25 year average. Heaven forbid anything shorter because the listed market,
26 unfortunately, unlike economic theory, it's not perfect - it doesn't have perfect
27 information - it responds; it lags. I'm pretty sure that the listed market does not properly
28 reflect new technology risk, or other things, because everybody is coming to grips with
29 it. I think there should always be that onus - I've come back to again, about data might
30 change but unless there's a manifestly key change - not just an updating - because
31 stocks go up and down, that it shouldn't be a parameter that just changes every cycle.

32

33 PROF GRAY: I'm sure we'll talk about gearing later, but I just can't leave that
34 comment that the AER's process for regearing is wrong, unchallenged. I think it's the
35 only correct one that's consistent with a firm that has a constant proportion of debt
36 finance.

37

38 ASSOC PROF PARTINGTON: It assumes that the debt beta is zero which the
39 triple-B-rated debt says it definitely isn't.

40 PROF GRAY: Okay, so there's a formula and there's the debt data - we'll talk about
41 both, I'm sure.

1

2 MR HOUSTON: I think also in terms of data and the two extra elements - the data set
3 and its relevance to beta, and gearing. I'm not suggesting that one should look at the
4 gearing of overseas entities. I mean, gearing is sort of a fact really that one can
5 observe. It may be a little bit difficult to measure - there may be some issues, but it's
6 essentially a matter of fact. Data is quite different in this instance. It's a statistically
7 uncertain variable that you need to estimate, and I think for that reason - it's quite
8 different in terms of its properties - and I think for that reason one should be much
9 more willing to look widely in relation to beta. Whether that's also important in relation
10 to gearing I think is an open or - it seems less important. I'm not saying it shouldn't be
11 done - it can be done, but it's not something, I think, we need to worry so much about.
12 The other thing is it seems to me quite open in relation to gearing to look at businesses
13 that would be listed or present or listed in Australia that are in infrastructure but not
14 necessarily energy networks for evidence on gearing as well because although
15 obviously they're different businesses, they may or may not have similar regulatory
16 regimes but I think the gearing variable is something that you can probably learn
17 something from the infrastructure sector more widely, whereas I wouldn't suggest that
18 for estimating beta.

19

20 DR MIRRLEES-BLACK: Are there any more questions on these issues

21

22 MR COX: Yes. I was interested in Graham's comment that you estimate beta relative
23 to a market portfolio and that differs considerably between countries. Just would be
24 interested in other experts commenting on the extent to which they see that as a
25 problem and how it might be dealt with.

26

27 DR MIRRLEES-BLACK: Stephen?

28

29 PROF GRAY: Yes I'm happy to go; so no beta estimate that you come up with is going
30 to be perfect so even the three comparative businesses that we have in Australia are
31 not perfect. There are unregulated assets in some, some are gas, some are electricity,
32 so even the three that we've got here are not perfect comparators. Also the three that
33 we've got here give quite different estimates and estimates that change materially over
34 time so let's not think that the data set that we've got here is in anyway perfect. So
35 then you have the question of do we try to conceptualise our way to a beta estimate or
36 do we look at all of the relevant evidence that's there; and so there are - so we have to
37 cast the net wider and get even less perfect comparators and so there's two directions
38 that we can cast that net wider. One is if we're worried about differences in market
39 structures and so on we can look at other infrastructure type businesses in the
40 Australian market so that's what Greg just mentioned so that's one approach and
41 then - so that's not perfect because these are businesses that are not regulated
42 network businesses but at least they're in the same market. The other approach is to
43 go overseas where you do have regulated network businesses but they're in different
44 markets. So in both cases relevant evidence that would inform your decision but not
45 perfect evidence and you'd take those things into account.

1

2 Is there a way of doing some kind of mathematical adjustment to the overseas market
3 portfolio of the overseas beta to Australianise it somehow? I don't think there is. I
4 think you just have to recognise that we need more evidence because we don't have
5 enough here to say anything with any sort of precision and we need to take into
6 account that we might give relatively less weight to the comparator evidence that we
7 have that's relatively less perfect for the task.

8

9 MR HOUSTON: I agree with that and we need to remind ourselves that the CAPM
10 model is a model of correlation with the entire portfolio. It just happens that we
11 measure beta by reference to listed entities because that's available and in Australia
12 we've got measures of Australian listed entities but actually the theory of the CAPM
13 says that we should be looking at the systematic risk by reference to every asset.
14 That's impractical, and so I think - and conceivably every international asset. There's
15 no reason why you would bar them but that's even more impractical so I think the
16 reality is that as Stephen said we go and look at listed entities that we think are
17 suitable in overseas jurisdictions that we think are suitable and we look at their
18 estimates of beta against their market because we can measure that and then
19 we - there is no practical way of Australianising that - so we take that for whatever its
20 finding, that's the practical reality. It's not perfect but that's what we have to work with.

21

22 MS CIFUENTES: But was it--

23

24 ASSOC PROF PARTINGTON: I'm not suggesting that we do Australianise it. I'm just
25 suggesting that if we go global let's do beta against a global portfolio.

26

27 MS CIFUENTES: That's right, I think as I understood Graham's comment it was more
28 around what is the in a sense the bench mark against which the beta's are being
29 determined so the US market, UK market and how do you actually adjust for that.
30 That's what I took your comment to be.

31

32 ASSOC PROF PARTINGTON: You just put all those markets into one index.

33

34 MS CIFUENTES: And create your own--

35

36 ASSOC PROF PARTINGTON: --and do your beta against the global portfolio.

37

38 MS CIFUENTES: Comparatory index.

1
2 ASSOC PROF PARTINGTON: Well there are published indices... there is a global
3 index.
4
5 MS CIFUENTES: Global infrastructure index.
6
7 ASSOC PROF PARTINGTON: Or you can do it, you can put them together, it's not
8 terribly hard.
9
10 DR MIRRLEES-BLACK: Any other questions on this? Well we've now reached the
11 time for morning tea so it's come around quite quickly but we'll now take a break until
12 quarter past 11, so thank you very much everybody.
13
14 **SHORT ADJOURNMENT**
15
16 We now have 90 minutes on compensation for risks starting now. In order to start off
17 the discussion, I'd like to invite Graham Partington to say a few words.
18
19 ASSOC PROF PARTINGTON: Okay. Well, I'm going to start with where I think there
20 will be general agreement, hopefully, and that is that it is covariance or systematic risk
21 that matters, at least for the cost of capital , other risks are accounted for in other
22 ways. That's the message of just about every major asset-pricing model that I can
23 think of, not just the CAPM.
24
25 So why are we using the CAPM pricing model? It's been around for 50 years, more
26 than 50 years, and it's the preeminent asset pricing model used in practice to estimate
27 the cost of capital. I understand that it's even used by some of the regulatory
28 businesses for some purposes like take-over appraisals. It's survived what I have
29 considered to be a very important test, the test of time and also another important test,
30 the test of practical use.
31
32 So what about the risks that are not systematic? Well, what do I mean by "risk"? In
33 general people think of "risk" as bad things that may happen. In finance we think of
34 "risk" as uncertainty. We don't know what the outcome is going to be. So if a bad
35 thing is going to happen for sure, like being certain and correct that you're going to die
36 by the end of next week, well, that's tragic, but in finance it's not a risk because it's
37 sure.
38

1 Bad things that might happen and are, therefore, uncertain because there's a "might",
2 they certainly affect value, no doubt about that, but they effect it through the expected
3 cash flow. There might be good things that might happen, which would also affect
4 cash flow.

5

6 So, conclusion, systematic risk goes to the discount rate, everything else goes into the
7 cash flow. Beware of lazy and thoughtless adjustments to the discount rate. Why?
8 Because adjustments that get made to the discount rate tend to get buried in there and
9 not thought about carefully. It's easy to do it, let's do it, let's get it out of the way, and
10 that can have a lot of unintended consequences. One unintended consequence is the
11 cash flow adjustments are often linear whereas a discount rate adjustment by its very
12 nature is a compound adjustment. You're operating a power series. So the
13 adjustment isnonlinear. Therefore, if you do want to mess about with the discount rate,
14 then check the cash flow consequences of your discount rate adjustment and then
15 once you've done that, provided you're happy that you've got it right, then you don't
16 need a discount rate adjustment, you've already done the job.

17

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

21

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

28

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

33

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

38

39 David would take a slightly different tack. I don't want to verbal David, but I think he
40 would agree that he would also say covariance matters but so does the mean cash
41 flow, which is why we've heard such a lot from him about the cash flow. It's the ratio of
42 the mean cash flow to the covariance that matters in David's analysis. However, the

1 interesting implication for regulation, if you adopt David's approach, is that if the AER
2 allows an increase in the mean cash flow, the required return goes down, which seems
3 to be a bit of a catch 22 because if the required return goes down, that means you
4 should be offering a lower cash flow.

5

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

11

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

13

14 DR MIRRLEES-BLACK: Yes.

15

16 ASSOC PROF PARTINGTON: Did I verbal you or was that fair?

17 PROF JOHNSTONE: Most of your story I would have agreed, taken on face value a
18 few years ago, but since I looked more deeply at the CAPM and gone back to the
19 earlier literature, you will find that the CAPM was actually being oversimplified. I've
20 had this explained to me by quite senior professors who say that it was all about
21 teaching it to undergraduate students and actually getting acceptance, especially when
22 the CAPM first came in, in the 60s, it was actually a revolutionary thing that upset
23 industry, and so it to be actually given a good spin.

24

25 Now, the basic story is that the beta is measured by the covariance of returns with
26 market returns, but returns are driven by cash flow, and in denominated returns is a
27 value, the asset value, so there's quite a circularity and, hence, to actually get to the
28 true basis of what drives beta, you've got to look at the statistical characteristics of the
29 cash flow stream. Now, in the enumerated covariance, definitely, and that's a really big
30 point and it's probably going to upset a lot of people in this room, but the covariance of
31 a lot of regulated revenue streams with the market is going to be very low, potentially
32 close to zero because the regulatory decisions are not influenced by market decisions
33 or at least not in a strong way like the NAB's revenue is influenced by market
34 conditions.

35

36 So fundamentally to deem the cash flows, which is what finance does, fundamentally
37 analysis, getting the cash flows, the covariance of regulated income streams with
38 market conditions, you have to say it's low, and that's how all outsiders see this
39 debate. I think people on the inside tend to get carried away. You know, with a
40 perspective which is not as down to earth and as real as that.

41

1 The second point is it's risk per unit of mean and so here's a simple example that will
2 get the intuition across. Suppose you've got some future cash pay-off which is random
3 and it might have a variance of ten, any number you like. Now, if it's means ten it's
4 risky because if it mean is 100, it's pretty good. If it's means a million, it's risk free. It's
5 a million plus or minus hardly anything and so it has to be risk per unit of mean. We
6 can't just think of risk per se. It has to be risk per unit of mean, so this comes back to
7 this point that Graham was talking about where if the expected or mean cash flow
8 pay-off at the end of the period to the entity increases, then under CAPM equilibrium
9 the discount rate applied to that cash flow, which is a random, it's eight lottery, the ex
10 ante discount rate applied to that would be reduced by the fact that it's mean is higher,
11 and that's a very unknown thing that's embedded in the CAPM.

12

13 It was actually described by Fama in 1977 and it was lost track off. It's come back to
14 life in several places academically lately, but the simple way out of it is to say
15 whenever you talk risk, always talk risk per unit of mean, not just risk. Also don't
16 equate returns risk with pay-offs risk because the pay-offs actually feed into the returns
17 in quite a complicated time. The pay-offs are the cash flows. They feed into the
18 returns in quite a complicated way and you only get returns after you've got equilibrium
19 prices and equilibrium prices are what the CAPM produces. So there's kind of a tricky
20 circularity going on there, but if we actually try to track it down to the basics and look at
21 cash flows, we have to say that the statistical characteristics of any regulated tariff
22 stream are two things in the simplified mean variance world, and that is covariance of
23 the cash flow with the market and the mean of the cash flow.

24

25 That's before you start to get to the weaknesses of the mean variance world.

26

27 DR MIRRLEES-BLACK: Okay. Do you want to come back?

28

29 PROF GRAY: Just a very quick question. So what should the AER do differently?

30

31 PROF JOHNSTONE: Well, that's asking too big a question for me to think of
32 immediately, but it's something that - I mean, we have to take this into account. If
33 we've been abusing or misusing the CAPM by interpreting it in a way where we equate
34 returns risk with cash flow risk, then, you know, we're on very shaky ground and - now,
35 we're meant to be the people providing expertise that would avoid that kind of mistake.

36

37 PROF GRAY: Hence my question. Now, your papers make the point that beta, in the
38 ordinary sense, is a sufficient statistic. If I told you that this is the true beta for a
39 particular investment, under your approach you would take that beta and plug into the
40 regular CAPM and that would give you an estimate of the required return?

41

1 PROF JOHNSTONE: Yes. I think beta captures the cash flow risk per unit of mean
2 that I talked about. In fact, there's an equation in my papers that shows the
3 relationship between beta and covariance of cash flow mean. The big premise that
4 you came up with was that you could tell me the true beta. Now that's where, of
5 course, we won't be reaching that bar today.

6

7 DR MIRRLEES-BLACK: Graham, do you have a--

8

9 ASSOC PROF PARTINGTON: No. I think I should give everybody else a chance.

10

11 DR MIRRLEES-BLACK: Greg?

12

13 MR HOUSTON: Well, I wanted to introduce this topic just by reaching back a little bit
14 to the one we just finished just to tidy up one thing, which is risk is covariance with the
15 market - and Graham did suggest that international beta, if you look at betas of
16 companies offshore you might do that in an international model. That would be a
17 covariance with an international portfolio. I think we can understand what that means,
18 but the question of whether that would be relevant would depend highly on whether we
19 were trying to estimate an international foundation model - not an Australian foundation
20 model for an Australian entity, but something else. I'm not quite sure, an international
21 something. So I think if you were to do that - you would be needing to start raising all
22 sorts of fundamental questions about every other component of the international
23 model. I'm not sure where you would be left or what you would think you would be
24 trying to do.

25

26 So I just wanted to, while agreeing with the concept of covariance, I just wanted to
27 make that sort of very important qualification to what we were discussing later in
28 relation to the role of the international betas.

29

30 In terms of moving forward to compensation for risk more generally, I don't want to
31 tangle quite yet with the details of what we've just heard, but I'm sure we will need to,
32 but I think it is just as important to say that to remind ourselves with Stephen's
33 proposition, which I agree with, that all risks need to be dealt with somewhere. Some
34 are systematic, some may not be, that the covariance that we measure with beta is a
35 measure of systematic risk and that properly, when it's put through its foundation
36 model, is applied to expected value cash flows, which have the opportunity to
37 incorporate other risks or the consequences of the expected values of other risks that
38 may not be or are not systematic but may be present and they are relevant. I think it's
39 pretty accepted, for investors, in particular the - I mean, if risk is symmetric, then the
40 expected value and the most likely value will be identical, but if risks are not symmetric,
41 either on the upside or on the downside, then you have the situation where the
42 expected value may not be the same as the most likely value and that's when your

1 cash flow is part of the equation, which is really reflected in that PTRM building block
2 framework, need to deal with the possibility that it may be asymmetric cash flow and
3 incorporate them into the cash flows to which we are applying this foundation model.

4

5 I think it's quite an important foundational thing for the conversation for the rest of the
6 discussion.

7

8 DR MIRRLEES-BLACK: So I think we've heard expressed, Stephen, in terms of, yes,
9 systematic, non-systematic risk, Graham's concurred with that. Greg, you've
10 concurred with that and also I think we've also heard commonality of view in terms of
11 cash flows.

12

13 Ilan, would you--

14 MR SADEH: Gosh, statistical concepts, which I have to say I don't naturally turn my
15 mind to day in and day out because I'm more focused on how do we in the market
16 actually think about things, and one thing I'd say - I am not sure if this wraps around
17 the covariance point, I might be confusing concepts, but I think back to an example of
18 the Sydney Desalination Plant, which isn't an AER regulated asset, but, nevertheless, it
19 illustrates the point. There was thinking around that initial structure that
20 consumers - sorry, the network should be indifferent to whether that asset is on or off.
21 Now, think about it if it were done another way, that they would say if you're required to
22 be turned off, don't worry, we will make you take the risk on it because when you're
23 turned on, we'll pay you ten times the amount and you'll get nothing when you're turned
24 off. The mean about that might be the same, but it's a hugely different risk. So I do
25 just bear that in mind.

26

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

33

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

41

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

9

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

15

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

22

23 DR MIRRLEES-BLACK: So making that explicit in your view would be helpful. Do
24 others concur?

25

26 PROF GRAY: Yes. I think as I said earlier, that a good guideline, a good
27 determination, would set out all of the risks that have been considered and say where
28 they have been considered and where they've been addressed and so that all
29 stakeholders could see the impact that they have on the regulatory allowance. So in
30 some cases that will be incorporated within the beta estimate because it's a
31 market-related risk, and in some cases it will be, perhaps, potentially, an adjustment to
32 the depreciation allowance. In some cases it will be an operating cost allowance, an
33 insurance premium. So storm and bushfire risk would be an example of that.

34

35 The danger is, if we're thinking in a CAPM framework, that we try to go down the
36 process of classifying risks into two different buckets, which is fraught with difficulty
37 because it's not either purely systematic or purely diversifiable, and those that happen
38 to be put in the diversifiable bucket, they are not relevant to the allowed rate of return,
39 but then somehow get missed when you come to the cash flows. I think that's the
40 important point from a high-level perspective.

41

1 PROF JOHNSTONE: I like that approach very much and I think that gets down to
2 basics, individual risks like, you know, the risk of bushfire affecting infrastructure and
3 having been in place and things like that, but the only problem with that is if you say
4 that the risks are related to the market and should still be rewarded, that you're
5 departing entirely from the CAPM framework that we're meant to all be working in. So
6 that would, therefore, suggest picking and choosing of the solution to suit the moment.

7

8 DR MIRRLEES-BLACK: Anyone want to come back on that or--

9

10 MR SADEH: Sorry, can you just explain that to me? What do you mean by--

11

12 PROF JOHNSTONE: Okay. So, for example--

13

14 MR SADEH: --not taking any risks in ..(not transcribable)..

15

16 PROF JOHNSTONE: I think Steve and I agree on this and that is it's quite common in
17 a fundamental cash flow analysis in corporations, at least the way we teach at the
18 universities - it's a little bit specific risk that organisations face and there are some
19 complicated ones obviously in these energy infrastructure firms. So we can go through
20 things like this bushfire risk that Steve mentioned that we would not commonly think of
21 and try to partition it between is it a systematic risk or is it an unsystematic risk.
22 Bushfire risk would be regarded in a textbook as classic unsystematic, completely
23 unrelated to the market.

24 So according to this CAPM framework these entities should get no reward for bushfire
25 risk. That's just strict textbook interpretation which is my point about how - the CAPM
26 is just the incredibly narrow framework and it's not necessarily going to give us the kind
27 of picture of reality that we want, but when we do get down to reality I come back to
28 this one point which is basically the elephant in the room and that is a regulated tariff
29 stream does not have a high covariance with the stock market.

30

31 PROF GRAY: We'll come back to that but I think the first point is - when you say that
32 the diversifiable risk, like storms and bushfires, should have no reward, so what you
33 mean there, I think, is that that doesn't affect the required return, but that doesn't mean
34 that it's irrelevant to the allowed return. So if you take an example, suppose you're
35 unable to ensure storm and bushfire risk for a moment and there's some chance each
36 year that your network will be affected by storms and bushfires and you'll bear a
37 significant loss, so the number that comes out of the CAPM - this is Greg's point - is an
38 expected return, so that's the sort of return that investors should be able to achieve on
39 average.

40

1 So if we set the allowed return equal to the expected return - and there is this storm
2 and bushfire risk - that means that in any year the best you can do is to get the allowed
3 return but there will be some years when you get less than that. So your expected
4 return now is less than the CAPM estimate of the required return. Although there's no
5 reward in the sense that a required return doesn't go up or down in relation to this, the
6 allowed return may have to be set above that CAPM estimate so that, on average,
7 when you take these risks in to account the expected return matches your CAPM
8 estimate and I think that's important.

9

10 PROF JOHNSTONE: I think a fair view agrees with that except for the fact that it does
11 depart from the CAPM strictly interpreted, which is apparently what we're hinging the
12 whole frame upon.

13

14 MR HOUSTON: No, I don't think it does depart from CAPM, that was the point.

15

16 PROF JOHNSTONE: It definitely does.

17

18 MR HOUSTON: The CAPM framework is to be, or is only valid when applied to
19 expected value cash flow. So it just means it's in another part of the framework. I think
20 there's no inconsistency in here. It's just a question of where risks are reflected.

21

22 PROF JOHNSTONE: The CAPM says simply that the market will give no reward to
23 organisations for taking risks which are zero covariance with the market, and so
24 bushfire risk for example.

25

26 MR SADEH: That's what a textbook says. If that were a case that ASX200 would
27 never outperform the government bond rate.

28

29 PROF JOHNSTONE: Okay, but what I'm saying is we're now blowing the CAPM away
30 and once you do that then you get in to the world of an allowed return which is then
31 completely judgmental.

32 MR SADEH: Can I give you my thought? I remember from my old stat days, the
33 second that you start to relax some of the CAPM assumptions you exponentially blow
34 out the complexity of the formula and I take that, so let's just take the simple CAPM
35 approach for a second - in the investor universe, from our perspective, both systematic
36 and non-systematic risks are - certainly systematic and some of the non-systematic
37 risks are included in our CAPM because our CAPM, for our love of ancient Greek, also
38 has an alpha in it. Some alpha you deal with through your expected cash flows and
39 some are directly in the alpha and that is one reason that market returns often look
40 higher than a regulated WACC.

1

2 At least in my own rationale, how I justify to myself why does it make sense the way
3 that the AER is currently apply its perspective is comes down to the whole premise of
4 the benchmark efficient entity. Non-systematic risks should be in the cash flow
5 allowances and not in the WACC because you don't want to give everybody the same
6 allowances for asset specific issues that you want them to efficiently deal with because
7 you want to give them the incentive to deal with it. That's why I separate - that's why to
8 me there's no alpha in a regulated CAPM but I do see it in a market CAPM.

9

10 PROF JOHNSTONE: In the end, whichever way you put it, if you're going to offer
11 returns that are outside what the CAPM says you're departing from the CAPM and then
12 that just changes the game entirely.

13

14 MR HOUSTON: I very significantly disagree and if we go just to page 24 of the AER
15 discussion paper, I'll read it for you. It quotes there from Brearley and Myers and it
16 says, "Investments" - this is the page that has three charts with different shapes of
17 return distribution probability. And it says, "Investments A and B both have an expected
18 return", not most likely return. My point is simply that the context for the CAPM, there's
19 a discussion about expected returns and it's nothing more than that. It's not
20 inconsistent with the CAPM, it's indeed fundamental to the CAPM and my point is
21 simply you need to be very careful that the cash flows to which you're applying this
22 estimated return are either symmetric, so that the expected return is the one equal to
23 the most likely return or, if not, you need to make an adjustment to those cash flows so
24 that you are applying them to the expected return. It's a textbook requirement of the
25 model.

26

27 PROF JOHNSTONE: Same old story though - expected return doesn't offer any return
28 for unsystematic risk like bushfires and, secondly, once you start worrying about the
29 statistical characteristics of the cash flow you think about something like variance, it's
30 symmetric, what, you might have a normal distribution symmetric, but if the variance is
31 all up side and the CAPM is hardly valid in that, the unpredictability tends to be positive
32 rather than negative, and that would be a good reason to depart from CAPM because
33 the CAPM is presuming that this risk is symmetric, that is like down as up, and I think
34 that consumers wouldn't see it that way.

35

36 PROF GRAY: Do you agree with the following two propositions: (1) that the CAPM
37 gives you an estimate of the expected return and (2) that the regulator should set the
38 allowed cash flows so the investors can earn that level of return in expectation?

39

40 PROF JOHNSTONE: Yes, that just says - you just said a CAPM and the CAPM says
41 expected return is the return related to the beta or systematic risk of the asset and,
42 therefore, no bushfire reward.

1

2 MR HOUSTON: The last part - I would agree with everything you said except perhaps
3 the last part is not - it doesn't necessarily follow.

4

5 ASSOC PROF PARTINGTON: Can I just jump in? Certainly the CAPM says you don't
6 get rewarded for varying a bushfire risk but bushfire risk affects your expected cash
7 flow.

8

9 MR HOUSTON: Correct.

10

11 ASSOC PROF PARTINGTON: So your cash flow should allow for the cost of bushfire
12 risk ..(not transcribable)..

13

14 MR HOUSTON: Precisely.

15

16 PROF JOHNSTONE: Actually the other point is correct, if bushfire risk was high the
17 mean cash flow would be lower, expected cash flow would be lower and the CAPM
18 required rate of return would be higher. So again it comes back to this fundamental
19 point that it's covariance per unit of mean and if we miss one half of the ratio then we
20 go down the wrong path, whichever path that is, whether it means a higher or lower--

21

22 PROF GRAY: But if we have a good estimate of beta that we're happy with we don't
23 need to worry about that. Is that right?

24

25 PROF JOHNSTONE: Beta, in principle, encapsulates all of that but, of course, in
26 reality doesn't go close.

27

28 DR MIRRLEES-BLACK: I think we may have a measure of agreement on this and it
29 may be that there's four and a half agreements, maybe that in the joint statement we
30 might be able to come up with a form of words which is helpful but I think clearly there's
31 a distinction between systematic and non-systematic and I think that the concurrence
32 that we should have explicit recognition of the non-systematic in the cash flows, which
33 isn't, and that would be helpful for the regulatory process. Does everyone agree with
34 that?

35

36 MS CIFUENTES: I think that's right.

1

2 DR MIRRLEES-BLACK: Do you have any questions that you want to raise with this
3 issue?

4

5 MS CIFUENTES: No. I'm interested in the statement that all non-systematic risks
6 should be compensated through the cash flow.

7

8 DR MIRRLEES-BLACK: Okay.

9

10 MS CIFUENTES: I have no difficulty with the general proposition of non-systematic
11 risk flowing through cash flow or that is the appropriate place within which they should
12 be considered. I'm just wondering whether the "all" was a stake in the ground or it was
13 a grammatical expression.

14

15 DR MIRRLEES-BLACK: Okay. Graham?

16

17 ASSOC PROF PARTINGTON: "All" - if they affect the cash flow they're relevant; if
18 they don't affect the cash flow they're not, and then the judgment of the regulator is, is
19 this actually a risk that is going to have an effect on the cash flow of substance and
20 should be accounted for. Obviously if it's trivial--

21

22 MS CIFUENTES: Can I give an example? Technological change - how would you
23 suggest that the AER assesses that?

24

25 ASSOC PROF PARTINGTON: Assessment - that's a difficult issue. What I think you
26 should do - and what was technological change and why - it probably implies that
27 some of your existing assets are redundant, their economic lives shortened, their
28 residual value will be less, so increase the depreciation allowance.

29

30 PROF JOHNSTONE: They're not optimised though. If you take rooftop solar, for
31 example, that could reduce demand a great amount but under the revenue cap it
32 doesn't affect the certainty of the tariff stream, at least not in the foreseeable future.

33

34 MR SADEH: We're not having a debate about RAB today. I'd rather not open a long
35 discussion--

36

1 DR MIRRLEES-BLACK: Which element of RAB?
2
3 MR SADEH: Logdown.
4
5 DR MIRRLEES-BLACK: I think that there is a - it was raised in the issues that have
6 been discussed by the group, the question as to whether there's a downside risk from
7 not being able to recover RAB and it's a question of how does that enter in to the
8 calculations. So I think that's legitimate.
9
10 PROF GRAY: My understanding is that the AER's process to date has been to set
11 allowed returns on the basis that there would not be any write-down, that the lock in
12 and roll forward process was sort of one of the fundamental tenets in that the allowed
13 returns were set on that basis. So to the extent that that's not going to happen during
14 the currency of the guideline, we don't have to accommodate it anywhere because it's
15 not relevant. That would be one example. If that were to occur - you know, there's a
16 heightened level of political risk certainly for these networks. If that were to occur
17 during the currency of the guideline that would certainly be an example of something
18 where the guideline would perhaps be reopened and reassessed in relation to that risk
19 that, henceforth, has not been compensated.
20
21 MR SADEH: That's a material risk. That's not just a, "Oh, well, there's another
22 element of the framework that needs to be reconciled from an investing point of view."
23 That's one of the fundamental premises behind the whole investability of the
24 framework. I know that when we look at this or other jurisdictions, I know when
25 overseas investors come here, one of the first things on your understanding of the
26 regulatory framework is how does the RAB work? Can I get logged down at the next
27 determination because quite simply, as a network operator, I don't have choice over
28 where I make the capital investment decision that's required under regulation under
29 licence. It's unlike another industry where I get to do a feasibility, I get to see is this the
30 right thing to spend - I can't stop spending it so, therefore, I look at - if I'm in
31 distribution, the current rules there that prohibit logdown; if I'm in transmission, there
32 are very limited exceptions.. and I say that gives me comfort that I can go and spend
33 capital, as I'm required to do.
34
35 DR MIRRLEES-BLACK: I think there was one issue that came up in the
36 pre-discussions which, I think you're saying, is not correct simply to ignore and assert
37 unquestionably that the existence of monopoly, in combination with regulatory
38 framework, can guarantee that RAB will be honoured and that was--
39
40 MR HOUSTON: I think I agree with the discussions that's just being had and I don't
41 really have much to add to the point of principle. There are questions as to the
42 evaluation of these risks, I mean, perceived raised technology risk. I mean, probably

1 that manifests itself in terms of the integrity of the assets and the remuneration of
2 them. So if that's all fine then that's all fine, but at the moment that's not the case, then
3 we need to completely rethink the framework in which we're discussing, the rate of
4 return guideline probably needs to be reopened. So I think where there's a measure of
5 agreement around principles and how they all fit together here, the practical question
6 that may arise is what is the size and shape of those risks, if anything. I don't know if
7 that's really - this is the place where are able to make that - but at the moment I think
8 it's reasonably clear.

9

10 DR MIRRLEES-BLACK: I have a few points there which we haven't quite delved in to
11 in terms of what is technological - we talk about technological risk and people refer to it
12 a lot. What is this technological risk and is it something which is - is it systematic or
13 non-systematic? Is it something which - to some extent are these issues of technology
14 risk - are they a red herring from the discussions that we should be having in terms of
15 setting the rate of return and we can actually lay them to one side, or are they
16 something which is fundamental to the discussion because it does affect genuinely the
17 way the investors would think about investing in these networks?

18

19 PROF JOHNSTONE: I think it's a good illustration of what's Steve's saying, it will be a
20 very good exercise to go through fundamental risks, physical and cash flow, one by
21 one and understand them and if you want to work in CAPM framework, some of them
22 will be rewarded, some of them will half systemic half unsystematic, but to get to that
23 level will give some clarity that you won't get by looking at market betas.

24

25 MR COX: I've got a question clarification to supplement that.

26

27 DR MIRRLEES-BLACK: Yes.

28

29 MR COX: A lot of the discussion has been about CAPM and the equity beta but the
30 question is what risk should be in the rate of return, which strikes me as a slightly
31 different question. I think Graham addressed that to some extent by saying that for
32 pragmatic reasons you should put the more non-systematic risks in the cash flow
33 bucket rather than the rate of return but that was essentially for pragmatic reasons, I
34 understand it.

35

36 ASSOC PROF PARTINGTON: Just it's consistent with the theory. That's the correct
37 thing to do. People stick things in the discount rate, like ..(not transcribable)..
38 sometimes because they just don't really know or they can't quite work it out and so,
39 "We'll stick in half a per cent." The dangers in that are that by the time you get
40 20 years down the track that half a per cent has actually compounded to be a pretty
41 large number.

42

MR SADEH: Alpha is very subjective. From my perspective, the distinction I draw is the nature of the incentive framework that you want regulation to take which is set for the benchmark efficient entity you want each network to be responding to its own issues and circumstances and, therefore, not get identical allowances to everybody else for asset specific risks.

MR COX: What I wanted to check was whether that was common ground in light of the conversation.

PROF JOHNSTONE: To me the question is probably not fully solved is how far beyond clearly systematic risks should entities be rewarded.

PROF GRAY: I guess we'll come to that, the estimation of systematic risk in the next session. I just add one point which is that if there's a view that a particular risk, technology risk or whatever it might be, is systematic or partially systematic and, therefore, would be reflected in and rewarded by a beta in the CAPM. To the extent that there has been a change in those risks quite recently, so that sort of technological risk, the changing role of the networks having to deal with distributed generation and two-way flows; another example would be the political risk that we see manifest itself in a couple of places. These are all things that have arisen since the 2013 guideline. So to the extent that we think at least maybe some of that has a systematic component and will come through beta, it will be very important to look at how beta estimates have changed since 2013. If we're saying that those things are going to be picked up in beta we'll have to look at the more recent evidence, if that's to be.

MS CIFUENTES: On that, do you have an intuitive feel for whether those sort of risks have been reflected in beta?

PROF GRAY: My view is you look at the evidence, right. So the data is going to be there, we're going to look at--

MR SADEH: My view would be that the listed markets haven’t factored in--

MS CIFUENTES: Haven't?

MR SADEH: Haven't factored in anything for any technology because quite simply there are many more experienced people in the profession, regulation and engineering ..(not transcribable).. who don't know what is going to happen, so a listed market participant is even less qualified to form a view.

1

2 ASSOC PROF PARTINGTON: It seems to me it's a diversifiable risk. If I'm worried
3 about rooftop solar, I just buy shares in a rooftop solar company as well as holding my
4 utility shares - problem solved.

5

6 MR SADEH: But how would you deal with - I mean, I'd like to talk through these
7 examples because they bring out the issues. Let's say that networks are more
8 uniformly impacted by technology, right, and neither is transmission versus distribution
9 and within distribution and for example an area that has a much lower density or
10 households, is likely to be more impacted by future technology on solar panels or
11 electric vehicles, then--

12

13 ASSOC PROF PARTINGTON: Hold a portfolio--

14

15 MR SADEH: --high apartment density and--

16

17 ASSOC PROF PARTINGTON: --across a range of utilities, right, problem solved.

18

19 MR SADEH: --and how to you allocate that?

20

21 ASSOC PROF PARTINGTON: Now, if you're not a diversified investor then, yes, you
22 do have a problem, but that's not the investor we're assuming in the CAPM. We're
23 assuming this is a diversified investor and investors can diversify a lot more quickly
24 and cheaply than companies can, although from what I observe, some companies are
25 diversifying. I think I've got some energy company offering to supply me with rooftop
26 solar, right, so they're diversifying by buying the physical assets.

27

28 MR SADEH: I don't agree with that. That sounds to me almost circular, that
29 everything is diversifiable and therefore there's no--

30

31 ASSOC PROF PARTINGTON: No, it's not. That's the point, systematic risk isn't
32 diversifiable.

33

34 MR SADEH: But then there are some elements of new technology that are not
35 diversifiable, that are peculiar to the specific network. Climate change is probably
36 another good example.

ASSOC PROF PARTINGTON: Somebody will be producing derivatives on climate change any time soon.

MR SADEH: Yes, but--

ASSOC PROF PARTINGTON: Just like you can buy temperature - well, you can already buy temperature derivatives.

MR SADEH: Sure but take a coastal network--

ASSOC PROF PARTINGTON: And rainfall derivatives and whenever some other risk pops up a smart bloke in an investment bank says, "We can make money out of this"; there will be a coastal flooding derivative. We already have catastrophe bonds which allow you to insure against catastrophes, right. Many of these risks have just been managed by investors through the capital market if they're taking a diversified portfolio. If they're not taking a diversified portfolio, well, yes, there's a problem but then should the consumer be compensating them for that problem? Probably not.

MR HOUSTON: Those risks are diversifiable providing the cash flows reflect the mean cost of those things.

ASSOC PROF PARTINGTON: Yes, we agree. We agree. So if there's something of that that may happen that's uncertain if it will affect the cash flows the expected cash flow that investors are valuing should be adjusted.

PROF JOHNSTONE: Conversely something good might happen, like an increase.

MR HOUSTON: So I think the question--

ASSOC PROF PARTINGTON: As well, yes, good example, right - yes, you know, we're worried about rooftop solar. What about an explosion in use of electric cars? Right. Then there will be people all over the place wanting to recharge, massive demand, electricity whizzing up and down the network in all directions.

PROF JOHNSTONE: So these sort of risks are the ones that the CAPM sees individual organisations as just potential casualties and the market will diversify, the individual organisation like Ilan says will often find it very hard to diversify internally and maybe doesn't even want to but under the CAPM that's a risk that there ought to be an

1 individual organisation that has to take and doesn't get rewarded for. That's the
2 weakness for the CAPM framework from the point of view of asset owners. It actually
3 doesn't offer rewards for these sorts of risks.

4

5 DR MIRRLEES-BLACK: I think we're saying that the technology risk is a risk but it's
6 not a special risk. It's a risk which will be dealt with within the framework of the model
7 for compensating risk that we've discussed and that's just one of those factors. The
8 board doesn't need specifically to consider this especially in developing the guideline. I
9 think that's the--

10

11 PROF GRAY: Further to the last point, I think the way it would be dealt with is
12 individual networks which have different sensitivity for this kind of risk will make
13 submissions about how these sorts of risks will impact them.

14

15 MS CIFUENTES: Just to bring that out, Stephen, so we would expect to see those
16 proposals would address it as part of the Opex, for example, rather than part of rate
17 return.

18

19 PROF GRAY: Yes, I'd expect so.

20

21 MS CIFUENTES: Which is what we would normally expect and what we actually do
22 see.

23

24 MR COX: I guess the problem that arises for us is asymmetric information, the
25 businesses know more about the risks than we do. We might hear about the risks that
26 are detrimental but not those that might be in their favour. I mean, that seems to me is
27 the potential problems ..(not transcribable)..

28

29 MR SADEH: I think that's a very true point and I don't know - I think trying to isolate
30 the impacts through a traditional beta would never give you an answer any way. I think
31 it's just eventually going to be something that everybody starts to understand more and
32 you talk to people - again I'll bring up the example of climate change; you say to
33 people, "How's climate change going to affect a potential network? How's it going to
34 impact energy demand?" Climate change doesn't mean that weather is always going
35 to be warmer. It just means it's going to be more volatile. So what it might do summer
36 peak is totally different to what might happen - it doesn't mean the winter peak goes
37 down. It might make winter events more volatile. I really don't know. I think we're
38 going to have to keep sharing a lot of information. It's the only way I can think about it.
39 At the moment people that I talk to, the understanding of climate change is moving
40 from conceptual to starting to quantify it but it's by no means properly know.

1

2 PROF GRAY: I think my earlier point of evidence versus vibe applies in both
3 directions. So it wouldn't be acceptable, I don't think, for a network to say, "Climate
4 change, climate change, give me another $50 million." There would have to be
5 evidence put up in the same way. It's got to be symmetric.

6

7 ASSOC PROF PARTINGTON: If I can go to your point of asymmetry and the delivery
8 of information, which I think is what you're interested in--

9

10 PROF GRAY: Yes.

11

12 ASSOC PROF PARTINGTON: One thing you can do is see whether what they're
13 telling investors is what they're telling you, right, and then if they're telling investors and
14 you the same story you can have all the more confidence in the story you're being told,
15 but if you see, right, they don't seem to be saying anything about technology risk
16 affecting the value of the enterprise to their investors, they don't seem to be writing
17 down asset values on the basis of technology risk, they don't seem to be voluntarily
18 restricting their investment - I know we've got statutory obligations but if the regulator
19 cuts - what I have to invest and I'm worried about technology risk and my assets
20 becoming obsolete, I'd be saying, "Whoopee, thank you very much." I might not meet
21 my statutory obligations but then it's your fault and I've got less assets at risk. So my
22 suggestion is look for other evidence that's consistent with the story that's being told. If
23 there's consistent evidence, data consistent with the story, then you can have a lot
24 more confidence.

25

26 PROF GRAY: Which is not to say that these reasons are made up, so there are
27 discussions being held in board rooms every month about the sorts of risks that are
28 being talked about here. There are companies already provisioning for more storms
29 and bushfires, the political risk, loss of merits review and those sorts of things, and
30 technological change - they're things that are being discussed in board rooms every
31 meeting.

32

33 MR HOUSTON: Just because - the asymmetry of information problem is intrinsic to
34 regulation, always has been, always will be. It's a problem that regulatory frameworks
35 are constantly evolving to try and address and I think we all recognise that as a
36 challenge, but that doesn't mean to say that you can, as I say, rely on the vibe. It
37 means that you have to put a high standard of evidence and accountability for
38 whatever is put forward on this front. I think we can't pretend that there aren't some
39 real issues here and to - just take it away from this jurisdiction - I mean, I think it's a
40 great study of the example of the Christchurch electricity distributor, Orion, which
41 suffered a major earthquake. The de-population of the residents living there was by
42 20%, causing a massive hit to their revenue for two to three years, despite whatever

1 regulatory rate will say about revenue cap or price cap, there's just no customer - there
2 were less customers to recover the revenue from, and major expenditure.

3

4 That expenditure ultimately finds it way in to the RAB, so that's all good, but there's a
5 huge revenue hit that that entity faced and by the time it could get to the regulator and
6 have a reset they took that process and only looked forward from the point of the reset.
7 So the revenue was a - which was tens of millions, on a hundred million dollar a year
8 business, was lost forever.

9

10 The point is, what should the regulatory framework make of that possibility? You could
11 think of it as a major bushfire, that took out a very large proportion of the network, or
12 something similar. I think we just need to be mindful that these events do happen, and
13 our regulatory framework is not very well designed to deal with them. But we just need
14 to be mindful of them, and when we talk about the framework we're setting up, they're
15 not in the rate of return we're estimating, in any way allowing for those kind of
16 possibilities. Yet investors do take them into account.

17 Another entity which I could name, an airport in New Zealand that's very prone to
18 earthquakes. They have choices about the amount of insurance they buy. And to
19 insure yourself fully against a sort of Christchurch-like catastrophic event from an
20 airport, including loss of revenue from a major closure of that airport, is prohibitive. Yet
21 at least in theory they could take out that insurance, and put it in their operating costs,
22 and put it forward to you, and you would perhaps feel proper in including that as an
23 operating cost that was part of their business. And the reality is, businesses can't
24 insure for everything completely. They are accepting some risk onto the balance
25 sheets of their shareholders, and their shareholders think about that when they are
26 coming to investment decisions in their business.

27

28 PROF GRAY: That's the last point from earlier. If there's not an earthquake that year,
29 then it appears ex post as though the business is over compensated.

30

31 MR HOUSTON: Correct.

32

33 MR SADEH: We work through all these scenarios in a lot of detail every time we look
34 at an investment. We look through what would happen if there was a major bushfire,
35 versus a fire within a substation, if some things are insured as a matter of practice,
36 some things aren't. What would happen for electromagnetic frequencies, what would
37 happen for a lot of different events. One of the other current topics that get a lot of
38 airtime is cyber-security. How we're dealing with that evolving risk which we didn't
39 know much about a few years ago, and now there's both additional regulatory positions
40 on us, as well as just heightened risk happening. I think it would be very helpful at the
41 point, talked about earlier, about making an acknowledgement about non-systematic
42 risks; but also having at least a statement of what some of those risks are. And to the

extent there's a position, yes, we think it's important; but if these points arehard to value, like changes in the new tech, at least we can monitor it.

DR MIRRLEES-BLACK: I think that's obviously something we need to deal with more in the paper. Clearly there's a distinction between systematic, non-systematic; whereas with these large, uninsurable events, which may have some serious impacts on shareholder value, which it's not even within the bounds of the framework, in terms of what can be considered to be an expected cataclysm. I think that's something which, again, it needs to be an acknowledgement, and we can set that out clearly in what we submit to the written report.

Shall we move on to other aspects of risk, unless you have other issues on this?

MS CIFUENTES: No, but I'll be interested in hearing a little bit more from Ilan about how the investors actually try and put a value on some of this risk, because in a sense that's what the regulator is being asked to do. So we're being asked not just to identify cyber-security or anything as a potential risk, but then to make an assessment for each of the businesses, and then make an adjustment, say through cash flow.

So I'd at some point be interested to hear how you do that, and I think I've heard you say we don't actually put a value on it.

MR SADEH: No, we're coming to grips with it, so when we see, for example, in the recent New South Wales privatisations when there was a new licence condition around no offshore, certain maintenance activities, we therefore went out and said okay, we typically get A and B and C firms overseas because they're accredited, but now we can't. How much extra does it cost us to source things locally, and that's effectively the cost of the risk. How much is, you know, as a starting point, the compliance team of people have to get, getting to understand how much is the extra time and cost of looking after different licence conditions.

DR MIRRLEES-BLACK: In the remaining time, we've got just over half an hour. I was going to propose we cover three issues, that will at least be helpful. One is, we've got differential compensation for risk for, as between transmission distribution, gas and electricity or the structure of the price control. That's one issue we can cover.

The second is, there's an issue that's been raised in questions, is investor confidence. investor confidence in terms of risk, how should that be reflected in the rate of return guideline?

1 The third, which is partially a hangover from the previous session, how should we deal
2 with the possibility of re-opening the rate of return guideline. I think it is important we
3 cover that. So those are the three issues, do you want to cover each of those.

4

5 So if we start with differential risk for different types of business. Any views?

6

7 MR HOUSTON: I'm happy to. My main observation is that I think the discussion paper
8 kind of consigns that issue, very quickly, to being not an issue. Essentially by saying
9 that, we've got a regulatory framework, so any business that operates in that regulatory
10 framework will have the same risk, therefore we don't need to worry about potential
11 distinctions between transmission, distribution, gas, electricity and so on.

12

13 I think that's too dismissive of this issue. There are some reasons why one might
14 expect, for example, a gas business, to have different systematic risk that electricity.
15 And particularly with the existence of, generally, higher income elasticity of demand for
16 gas. And I'm not sure if you're aware, but this issue has come up in New Zealand, it's
17 got quite a long history, and they've made very different choices at different points in
18 time, including to set a higher beta value for gas pipeline businesses.

19

20 Essentially after a combination of considerations that involved, firstly, evidence as to
21 differential rates of income investors, which actually, as it happened, started its life
22 through academic papers in Australia, about the income elasticity of demand
23 differentials here. All on the conceptual hypothesis that that could affect systematic
24 risk. And they gradually worked through looking at samples of betas from overseas,
25 because essentially there's nothing you can find from New Zealand or even from here,
26 because the sample sizes are too small to differentiate them.

27

28 So I think we should be open to the possibility, and to the consideration that different
29 types of businesses may have different degrees of risk. There was a time when
30 transmission distribution in Australia had different betas as well. So I think we should
31 be open to that possibility, to approach it with thinking what does the theory, or what
32 conceptual framework issues, what they might tell us about that, and what does the
33 evidence say.

34

35 Because I think the way the discussion ended, discussion paper, essentially says well
36 if you're regulated, you'll have the same kind of risk. But on that principle, you would
37 be saying that an iron ore railway in the Pilbara had the same beta as an electricity
38 distribution company in the metropolitan area on the east coast. Or you'd be saying
39 that an airport - not that airports are formally regulated - but they would have the same
40 beta as an electricity or gas distribution company.

41

1 I think while we all understand that the regulatory framework influences risk, and
2 indeed influences systematic risk, I think it's much too oversimplifying to suggest that
3 we have a framework that equalises those risks for all businesses. Even if you just
4 take the distinction between gas and electricity in this country. The gas regulatory
5 framework sets reference tariffs, but the reality is that for most gas transmission
6 pipelines, next to no-one pays that reference tariff. They're all paid on long term
7 contracts that are set with regard to that reference tariff, but we're rarely at it. And
8 when you say that we have a regulatory determination in gas, you don't have instantly
9 all the tariffs adjusting in response to that. It's a much more disconnected practice.

10

11 So I think, my core proposition is that we should be open to that possibility, and have a
12 process to give it due consideration, and the conclusions will be whatever the evidence
13 tells us.

14

15 DR MIRRLEES-BLACK: Other views?

16

17 ASSOC PROF PARTINGTON: Sorry, I was away. We're on the?

18

19 DR MIRRLEES-BLACK: We're talking about--

20

21 ASSOC PROF PARTINGTON: Materially different risks.

22

23 DR MIRRLEES-BLACK: There's different risks as between different businesses,
24 transmission distribution, gas, electricity.

25

26 ASSOC PROF PARTINGTON: I take the point, all the utilities are not the same. They
27 do have significant market power and relatively low price elasticity, so at least pretty
28 similar revenue risks. Operating costs risks ..(not transcribable).. quite different. So,
29 yes, there could be differences in risk. Do I think we've got any chance of reliably
30 measuring that? No.

31 PROF JOHNSTONE: And a full description of this would involve the supposed upside
32 risk, in other words, the risk of something could happening. Gas versus electricity, for
33 example. You couldn't look, it would be one sided to look at only the potential
34 negatives that can affect the future cash flow of the organisation, and to completely
35 ignore and therefore bias the whole settings, by not allowing for, equally like, in a
36 symmetric situation, equally like the good things.

37

1 So for example, the fact that assets are optimised out of the asset base, that takes
2 away a lot of the things that we would think of as risk, and actually makes the
3 distribution of cash flows not symmetric.

4

5 ASSOC PROF PARTINGTON: Sorry, I should also clarify, I wasn't talking in terms of
6 cash flow adjustments particularly, I'm still back in--

7

8 DR MIRRLEES-BLACK: Beta. Stephen?

9

10 PROF GRAY: Just evidence, so if you can quite reasonably see that a gas pipeline
11 with a couple of mines at the end of it, might be in a different risk class to a
12 metropolitan electricity distribution network. It would be up to that gas pipeline to make
13 the case and provide some evidence.

14 DR MIRRLEES-BLACK: So therefore we'll be discussing in session 2 whether we can
15 reliably measure that difference.

16

17 ASSOC PROF PARTINGTON: On UK regulators, I think they decided they can't, and ,
18 put everything in one bucket.

19

20 MR SADEH: But what I see about any, let me show a few examples. Another sector
21 where I would see differences between betas, here's a difference between a beta and
22 alpha in the toll road sector. If I had a cross city ring road, where I had exposure to the
23 whole city versus a new growth corridor, that's a beta difference. If I had that same
24 ring road that was in construction, that's an alpha. Because that's something that I can
25 control. I'll just talk about electricity, I'm not qualified to have a view on the difference
26 between gas and electricity. But between transmission and distribution, there are
27 differences in the businesses themselves, but I don't think they need to translate into
28 the rate of return, because the overall regulatory framework puts them in a similar
29 position on risk. Where there are differences in the businesses, the way I think about
30 it, distribution is much closer to the customer, it's got more involved with stakeholders,
31 it's got a higher labour proportion that you require. It's got additional services that need
32 to be provided, like emergency services. They're all things that are in the Opex
33 allowance, to me.

34

35 There are different levels of unregulated opportunity between the two again, but again
36 that's not a regulated rate of return issue. So I don't think at the moment, I'd support
37 always checking through to see if there's any evidence, but my intuition is that there
38 shouldn't be a material difference between the two on ROR.

39

1 MS CIFUENTES: Stephen, does that also address your point, where you were saying
2 that the gas pipeline with the two mines at the end is vastly different to an urban
3 electricity distribution company? The businesses need to bring that out in their
4 proposals. Would you expect to see that addressed more at the Opex level, rather
5 than rate of return?

6

7 PROF GRAY: Yes, so some aspects of it might be Opex differences. But there may
8 also be the point about income elasticity. That has a systematic component to it, so
9 there could be elements of both.

10

11 PROF JOHNSTONE: Correct me if I'm wrong, but if suppose the mines close down,
12 so that pipe's not used anymore. Does the revenue cap arrangements still allow the
13 money to come from elsewhere anyway?

14

15 MR HOUSTON: No. From who? Not in the gas situation.

16

17 What about in electricity?

18

19 MS CIFUENTES: Is that what the?

20

21 MR HOUSTON: Perhaps. I don't think that such a situation exists.

22

23 PROF JOHNSTONE: That's a key point.

24

25 PROF GRAY: And that's the sort of evidence I'm talking about. That gas pipeline with
26 the two mines at the end.

27

28 DR MIRRLEES-BLACK: Investors. Investor confidence and risk. Are there reflections
29 on investor confidence and risk that should be influencing the guidelines?

30

31 MR SADEH: As I've mentioned in my opening comments, I think investor confidence is
32 necessary for the long term interests of consumers. A lot of people talk about the cost
33 of funding, and that is true. I also talk about the benefits to everybody of encouraging
34 innovation. I don't think it needs to more explicitly factored in, other than saying that
35 therefore, I think that there should be, in a way, a higher bar on looking to make any
36 fundamental changes to things, because there is a cost of investor confidence every

1 time we make a change to the framework. And that absolutely doesn't mean that we
2 shouldn't make changes, but it means that we should really be mindful of the
3 downsides.

4

5 PROF JOHNSTONE: It's about investor confidence in user industries as well, of
6 course. So investors are more confident in the revenue earner, but less confident in
7 the revenue payer. That's the broader perspective.

8

9 DR MIRRLEES-BLACK: Any other points that others want to raise, on investor
10 confidence?

11

12 ASSOC PROF PARTINGTON: Well, I guess you have to use discretion, right? We
13 talked about discretion earlier. And obviously it's exercised with care. But where
14 possible, the intention to use discretion should be signalled well in advance, so people
15 get the opportunity to adjust, as far in advance as possible. It's self-evident, isn't it,
16 that discretionary changes that involve large transfers of wealth should be considered
17 very carefully, whether it's a large transfer to the businesses or a large transfer to the
18 consumers.

19

20 DR MIRRLEES-BLACK: Any other questions on investors?

21

22 PROF GRAY: Just one point, which I'm sure we'll come to later. We've danced
23 around the trailing average cost of debt a little bit. I'm sure we'll come to that more in
24 the future. But just in terms of investor confidence. What an extraordinary situation it
25 would be, if we moved from the rate on the day allowance, to a trailing average
26 allowance, with all of the pain over many years that that involved, to then switch back
27 to a rate on the day allowance at the first opportunity.

28

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

31

32 MR HOUSTON: I think from an economic perspective, regulation is a repeated game.
33 That's the very nerdy way of describing it, but regulation's a process that, decisions are
34 repeated, we're talking about one more guideline that's already been, there will be
35 others in the future. And essentially, we've got to remember that these are long term
36 assets, we're having a repeat process about the remuneration of those assets, and
37 most importantly, we actually need capital to keep coming into the sector, to provide for
38 future investment. It's not like a pipeline where we build it and then it sits there for
39 20 years, and we wait or hope that people will come.

40

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

7

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

14

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

18

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

25

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

30

31 So particularly in the low interest rate environment, the incentive to overspend on
32 Capex is quite small. You would rather work with the incentive rather that just build.

33

34 DR MIRRLEES-BLACK: Any other questions on this? There is the issue which is
35 important we need to deal with in the remaining 15 minutes of this, and that is the
36 potential for the re-opening of the guideline. Because a binding guideline, there would
37 be provision for the AER to re-open. And obviously that puts a context around it. And I
38 think there's questions around under the circumstances under which it should occur; if
39 it does occur, what are the criteria for it to occur; and should it, it comes back to
40 previous questions on the judgment that needs to be applied in doing so. Who has
41 some thoughts on that?

42

1 ASSOC PROF PARTINGTON: Can I seek a point of clarification. Presumably
2 regulatory relief will still be available even under these guidelines. In other words, if
3 there's a problem in that you're regulating businesses, you'll be able to do something,
4 by accelerating the depreciation, or allowances is that out? For example, let's think of
5 a catastrophe, right? The Christchurch earthquake. Clearly there's problems. What
6 are we going to do? We stick with the guidelines, so sad too bad?.

7

8 MS CONBOY: I think that's part of what we're waiting to explore though, isn't it?

9

10 MS CIFUENTES: We don't have all the available advisors in the room, to advise us on
11 any of those provisions, but I've got to say that did cross my mind, whether there is
12 such a material change to the circumstances of the determination. Without having the
13 legal team, we've got a quasi-legal expert at the back, but I think that rather than divert
14 the whole conversation into what do the rules provide, in terms of those extraordinary
15 circumstances, I think it's more general re-opening, rather than the catastrophic event.
16 I think framed in the guideline itself, it would contemplate more a regular event,
17 conditions change, do you get another GFC for example, rather than something
18 completely catastrophic for one business. That was an attempt just to bring it back.

19

20 MR COX: I would have thought, you would imagine that were there to be a
21 catastrophe, that something would happen. I mean, it's just the the way the world
22 works I guess the question's whether they should be ..(not transcribable)..

23

24 MS CIFUENTES: Isn't it a question of whether it's, if you've got a catastrophe that
25 involves one business, I don't know that that would necessarily mean re-opening the
26 rate of return guideline; so much as re-opening the determination. So you would need
27 a catastrophic event that would wipe, essentially undermine the whole basis of the rate
28 of return guideline. Another GFC might actually fit that bill. But the difficulty of that, of
29 course, is the GFC may actually take some time to unwind.

30

31 MR HOUSTON: I think we're talking about catastrophic or cataclysmic events that go
32 to the estimation of market parameters which underpin it, rather than to the physical
33 circumstances of any entity to which they are applied. We all know that there could be
34 circumstances in which the rate of return guideline that will come out of this process
35 may no longer work. It's easy to see that. It's quite a challenge, I suspect, though, to
36 write down all of the circumstances that might give rise to that. We could perhaps write
37 down some, but I doubt that we could ever hope to catch them all, just by definition, as
38 we don't know what could happen.

39

40 But there are some, could be some sort of obvious indicators that there were problems,
41 I think. One would be that debt yields started to exceed the equity allowance in the
42 guidelines, I think that would be a pretty clear sign that there was a problem. We have

1 had times that were close to that, or like that, in the past. Another example might be if
2 the risk free rate fell below some measure of inflation expectations, so that you had,
3 effectively, negative forward-looking risk free rates. Negative real risk free rates, might
4 be another sign. So they are market based signals that, I think, would give cause for
5 pause. But I'm not pretending that I've got a full list, but there's some examples.
6
7 Whether it's sensible to try and set out a positive list, which inevitably will be
8 incomplete, I think is a difficult question.
9
10 PROF JOHNSTONE: This relates very closely to the last discussions, because it's
11 basically saying, do you think of risks on suspicion, and rewards on suspicion, or do
12 you make ex post adjustments. So by re-opening a determination. In some cases,
13 obviously, the potential, for example, of some terrorist thing or something, where the
14 potential risk is so horrendous that there's no way that you could grant a rate of return
15 ex ante on the suspicion that's going to happen one day. On the other hand, if it
16 happened, well, something not as dire as that, and clearly then a new determination
17 would make sense. And as Jim says, it would essentially happen of course, because
18 that's how things work.
19
20 MS CONBOY: Would that be to the rate of return guidelines, or would that be to the
21 actual determination itself?
22
23 PROF JOHNSTONE: The determination.
24
25 MR SADEH: Firstly, I agree with the distinction between the Opex allowance and a
26 broader determination, which can have specific elements to the broader rate of return
27 itself. I think we should be very circumspect about putting it in general re-open, as
28 anything. If you have any re-openers at all, they should be very tightly defined,
29 because this goes back to my concern about - no-one can have it both ways. If the
30 investor community wants certainty, it also needs to offer it back, in terms of accepting
31 the decision for the period. That's why there's a need to mesh the length of the
32 regulatory period, if you've got a trailing average, that that isn't exposing you to a single
33 event at the time that the determination's made. I think, when I look at the current mix,
34 I think well that probably says that you don't need many, if any, specific re-openers on
35 the rate of return. If you have a major GFC, you know, just ordinary course of event
36 cycles, even something a bit of out of cycle, well, as investors, I don't think there's too
37 much of an issue on the risk free rate. Because I'll have entry year issues, but I can
38 deal with my hedging properly at a trailing average to take care of that. If I didn't have
39 a trailing average, it would be a very different situation.
40
41 PROF GRAY: I think there's a couple of just practical examples as well. So, take the
42 GFC example and I think the bottom line there is that you wouldn't reopen the guideline

1 lightly, that it would take an extreme type market event such as a GFC with the kind of
2 features that Greg was outlining. In addition to that, I think there's a couple of practical
3 things. One is, if the data that's being used to mechanistically update parameters is no
4 longer available. We almost lost our data service providers for return on debt a
5 number of years ago and it wasn't that long ago that there was an inquiry about
6 whether we should close down the Government bond market, so that would be an
7 example of just the data, as strange as that seems now, but the data might not be
8 available - and then another example, just that's arisen this week, is the opposition's
9 policy in relation to imputation credits that presumably makes the equity ownership
10 method for estimating gamma - apologise, for raising gamma like this. It's irrelevant.

11

12 MS CIFUENTES: Can I just take you back then to the GFC as an example? As you
13 recall, with the GFC, it unfolded over quite a period of time and it wasn't immediately
14 obvious, even to those of us that were in financial markets, at the time, how it would
15 actually play out. Does that - at what point then do you reopen, or is it an ex post
16 event that you then say, okay, well, we'll look at your - the impact that it had when we
17 do your next reset to see if it was materially different for those reasons. Again, is it a
18 reopening? You know, I'm just conscious of the fact that there are some who would
19 still argue that the GFC was just part of the natural long-term cycle and in the wash up
20 it probably didn't have long-term implications. Now, I'm not suggesting that's my view,
21 but there is a view there. So, at what point would we have reopened, let's say, if we
22 have another GFC?

23

24 MR HOUSTON: I don't think this is necessarily going to be a helpful contribution, but I
25 think if you just cast - I was involved and around at the time of the last GFC, and one
26 example of that slow--

27

28 MS CIFUENTES: Slow go.

29

30 MR HOUSTON: Slow, sort of, revelation of what was happening was some very
31 dramatic changes downward in the risk-free rate, in a short space of time and for those
32 that - not everyone may have been around, but that had very, very dramatic impacts on
33 the revenue termination process for the New South Wales and ACT distribution
34 businesses, all to do with the formulaic arrangement that existed at the time, as applied
35 to the period that measured the risk-free rate and the timing of that measurement
36 period and those changes made dramatic - had a dramatic impact on the revenue
37 determinations of those businesses. And to my mind, that illustrates the difficulty with
38 trying to do what it seems you may be asked to do, which is to consign the
39 measurement of some market variables to a formula, because there can be highly
40 disruptive periods when there's very dramatic changes and I don't think that whether
41 you're on one side or the other side of that measurement - and I'm talking about sides
42 in terms of timing, you know, a month or two can make a big difference. I don't think
43 that leads to good policy or good regulatory decisions. Quite what that means for the
44 guideline, I think, is a very difficult question, but assuming we don't have the legislative
45 requirements that have been put on the table, I think that would, to my mind, suggest
46 that your guidelines should have some generic clause that says, "You need to be able

1 to exercise discretion to override a formula that could be giving a very odd outcome"
2 and that odd outcome could be - it might be good for the customers, it might be bad for
3 business, it could be the other way around. We can't predict. That would be my
4 personal view. However, if we're in a world with the legislation as proposed, I think that
5 risk is one that, it seems, you've got a practicality in avoiding. In which case, you're
6 then confronted with the question of, well, given tumultuous times, can we - and
7 assuming we're not in the thick of making a determination which would be a matter of
8 luck - then what's the decision-making process to reopen the guideline? Indeed,
9 perhaps to ask the legislature, to say, this binding thing actually doesn't work anymore.
10 We need some - to wind it back again. That's just a statement of a problem rather than
11 a solution. I think the main thing I would counsel is that we all sit here with eight or ten
12 years of relatively stable financial market conditions and think that we can address
13 these issues for the long-term, assuming that things won't change very much and
14 history says that that's an unwise assumption.

15

16 DR MIRRLEES-BLACK: I think the question is that even if it manifests itself, because
17 the Chair's point was that it's not necessarily easy to say these conditions have now
18 manifested themselves at the time and I think the question is, you can say, well, there
19 are some criteria, how can you actually measure those criteria and write them down
20 and make it so that it's not entirely subjective?

21

22 PROF GRAY: I don't think you can. I think it's one of those things that you know it
23 when you see it.

24

25 MR HOUSTON: Yes. I don't think you can write it down in a precise way.

26

27 PROF GRAY: The example would be the GFC.

28

29 MS CIFUENTES: Yes.

30

31 PROF GRAY: I think you've got to try to fix things straight away, because if you take
32 that scenario, so Lehman Brothers defaulted and then within a month the government
33 bond yield had gone from seven to four at the same time that the BBB yields had gone
34 to - well, we couldn't even measure the markets.

35

36 MS CIFUENTES: Yes.

37

38 PROF GRAY: It was off the top of the chart.

1

2 MS CIFUENTES: Yes.

3

4 PROF GRAY: Within a month, and so the effect of prescribing fixed parameters for
5 transmission businesses in particular was that, like, we know that this is a crisis .
6 Anyone who had a window could just look outside and you see that there was a major
7 financial crisis, and yet the allowed return on equity was - the cost of equity was
8 assumed to be cheaper than at any time in history. That's just nonsensical and
9 it's - you know, it's one thing to say, well, we're not sure how much we should be
10 changing that, but to fix that lowest ever allowed return on equity, in that circumstance,
11 for the next five years and then maybe do some sort of squaring up at the end of the
12 day and I think you're then getting to, like, intergenerational equity issues that - why is
13 it that the square up is going to be paid for - the cost here is going to be paid not by the
14 customers who were served in this period, but by the next generation of customers.

15

16 MS CIFUENTES: Yes.

17

18 MR SADEH: Do you think that's more an issue of profitability as opposed to the cost of
19 debt?

20

21 MR HOUSTON: No, the debt cost changed dramatically as well--

22

23 PROF GRAY: Well, they do, but--

24

25 MR HOUSTON: And this is--

26

27 PROF GRAY: But is your existing mechanism--

28

29 MR HOUSTON: If you have - this is one of the great benefits of the trailing average
30 cost of debt, but we're not going to mark the entire debt for follow through at this very
31 high - it's going to be one-tenth as we go through.

32

33 MS CIFUENTES: That's right.

34

1 MR SADEH: I've got some great old debt that priced at bananas and got new debt and
2 that's exactly what happens, you know, we don't suffer the full consequence either
3 direction of - rates changing tomorrow doesn't mean our debt prices have changed,
4 just our marginal debt that we've issued.

5 PROF GRAY: It's the wild swings in prices that customers have to bear as well.

6

7 MR HOUSTON: That's all true, but it is also conceivable you could be measuring - you
8 could be looking for measures of the cost of debt at a time when no sensible person
9 would be raising debt, depending on how it is done, so it's a good thing, the trailing
10 average from this point of view, but it's not to say that it's completely blemish free. At
11 least, it's a possibility.

12

13 MR SADEH: No, look, the issue that you have that again, you know, from the GFC, is
14 markets can actually close. People never thought it would happen, 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 businesses
21 around in terms of their funding needs, you know, the impact of one or two capital
22 markets closing can be huge.

23

24 MS CIFUENTES: Can I ask just one threshold question, and given it's close to lunch it
25 can be dismissed very quickly, the threshold question, should it be the AER that makes
26 the decision about the reopener? Well then, how about COAG's EC?

27

28 ASSOC PROF PARTINGTON: They gave you the problem, so you can give it back to
29 them..

30

31 MS CIFUENTES: Well, think through that, though.

32

33 ASSOC PROF PARTINGTON: Of course, the danger is then you get a political
34 solution, not an economic one.

35

1 MS CIFUENTES: Thank you.

2

3 MR COX: It may not be within our power to give it to them.

4

5 PROF GRAY: Imagine if there was a financial crisis in an election year, you know, and
6 you had done that.

7

8 MR SADEH: I think that's why--

9

10 MS CIFUENTES: Except again, you would need the agreement of the whole of COAG
11 EC. Think about it. It's not an attempt by the AER to unlist itself of responsibility, but
12 to the extent that I can see that how will the approach be made? Would it be just an
13 approach by one business? Would it have to be an agreement by all the businesses?
14 There are some practical issues there, notwithstanding even whether we have an
15 opener, a reopener, or not.

16

17 MR HOUSTON: I mean, you could be a victim of some very unfortunate timing in this
18 kind of setting. I mean, this is a possibility, so I think you need to give some thought to
19 the process and ensure that it's not a lengthy one, because you could find yourself in a
20 situation where you had weeks or even less to make these kinds of decisions and I'm
21 not sure the COAG EC process is up for that.

22

23 DR MIRRLEES-BLACK: Well, it sounds like there's quite a lot of agreement, though,
24 about what's been said here. I mean, one, probably there should be reopener.
25 Second, the circumstances of it are difficult to describe, but - and judgment is going to
26 have to be applied when it's done, but there should be a high bar so that it's not
27 applied lightly.

28

29 MR HOUSTON: Because I think it should be applied to scenarios, whether they're - if
30 you can't define them that's one thing. Should it be a general reopener? We just feel
31 like there should be some definite points around--

32

33 DR MIRRLEES-BLACK: No. Exactly.

34

35 MR HOUSTON: --data unavailability, or you know, when you get to the point of then
36 it's called a GFC and then the question is how do you define it? Well, at the moment,
37 effectively, political or governments of the day define when insurance of this happens.

1
2 DR MIRRLEES-BLACK: Yes.
3
4 MR HOUSTON: So, we could have something similar to that, I guess.
5
6 PROF GRAY: I think the guideline maybe doesn't write down a formula that's to be
7 applied, but maybe provides some examples of the sorts of things that would lead to a
8 reopener.
9
10 ASSOC PROF PARTINGTON: And the sort of criteria that needs to be--
11
12 MS CIFUENTES: And the process for it.
13
14 MR HOUSTON: I think the process should be avoided because as I understand it,
15 there's an obligation to update the guideline, but that involves meeting with - having
16 this kind of process. It tends to be very lengthy, so when people are talking about we
17 need to get an outcome in that situation very quickly, so it wouldn't be making a whole
18 new guideline. It would be some kind of pressing amendment, I think is what you - so
19 the processes are very important. It's not just a rerun the six to 12 months.
20
21 DR MIRRLEES-BLACK: Well, it may be that you can click in - that you have a
22 guideline which you press a button and it clicks a new process within the guideline, if
23 that's feasible and that counts as being mechanistic, and you would think--
24
25 MR COX: One thing to think about is the information asymmetry here, because I can
26 imagine businesses liking and that we had what we have and it's about things move
27 against them, but maybe less keen to do so in their favour. So, I think that needs to
28 be, you know, sort of--
29
30 DR MIRRLEES-BLACK: Very good. I think we have some agreement--
31
32 PROF JOHNSTONE: Can I just say one thing? It would be lovely to understand better
33 what a GFC would do to the cash flow situation of the entities. Someone was talking
34 about the fact that his interest rises are pretty immune, at least in the short-term,
35 because they're deals that are done. I know that a drop in the risk-free rate would lead
36 to the tariff formula of reduction in income, but we talked about it from the perspective
37 of investors in the entity rather than the entity itself and the regulator's concerned with

1 the entity, the cash flows to the entity, not to the fortunes of investors in the entity. I
2 think we can tend to mix those up. We take the perspective of investors in the entity as
3 if that should be our focus, when in fact, the regulator should be focussing on the entity
4 itself and its fortunes.

5

6 MR SADEH: Let's take a financial market crisis as opposed to, say, a labour crisis as
7 something that could add other impacts and start with the existing revenue cap
8 premise, so, you know, effectively there might be changes in demand. Obviously, that
9 might not directly impact in terms of the way a CFO will think about what is going to
10 happen? It's not going to be as, you know, flippant as I made it sound and obviously,
11 that's what I'm doing here. Of course, it will do something, but it won't flow through one
12 to one, so the first thing they'll think about is in terms of are there any binary impacts?
13 Are markets going to close and is that going to impact my refinancing? Second thing,
14 am I going to have a material impact on my costs? Now, that might be a tenth, you
15 know, one-tenth of my capital structure, it might be more, but then I'll think about that.
16 Then they'll start thinking about if interest rates go up generally, what happens to me?
17 I start to come against my ratio covenants with the credit rating agencies and the
18 banks, because if one for one, your cost and your revenue goes up, your interest cover
19 falls. So, you start to think about, is there any pressure on my short-term delivery?
20 That would be the thought process that they'll give it.

21

22 PROF JOHNSTONE: That makes a lot of sense to me and again, that's focussed on
23 the entity itself rather than on investors' perspective of the entity.

24

25 MR SADEH: Yeah, that's right and then the company will be bringing it up to the
26 board.

27

28 PROF JOHNSTONE: It's what's in our bank account inside the entity, basically.

29 MR SADEH: Yes. Yes. It'll be focussed on their credit rating will be number 1 from
30 the financial point of view.

31

32 PROF JOHNSTONE: Which affects then, in turn - I mean, if you pay a higher interest
33 rate we've got to protect the entity itself. So, I understand what you're saying and I
34 think that that kind of focuses again back to reality, back to cash flows in and out of a
35 regulated entity.

36

37 DR MIRRLEES-BLACK: Okay. We've covered off quite a lot of risk material.

38

39 MR SADEH: Sorry, can I just mention one thing? I'm talking from a, you know, from
40 an institutional and a private investor perspective. One legitimate voice that hasn't

1 been spoken about is government owned entities who, by nature, don't have - they just
2 don't have external debt. Now, I know we're talking about a benchmark efficient entity,
3 but I don't know whether it's worth considering from their perspective a, you know, a
4 material event, because that would just crater their revenue and nothing else happens
5 on the other side to, you know--

6

7 MS CIFUENTES: We'll take that one on notice, because it goes to the benchmark
8 efficient entity, the characteristics of ownership traditionally hasn't been a relevant
9 factor.

10

11 MR SADEH: Which I understand. Yes.

12

13 DR MIRRLEES-BLACK: Good. Thanks very much. We'll break now. We reconvene
14 at 1.45. Thank you.

15

16 **LUNCHEON ADJOURNMENT**

17

18 So this afternoon we have one hour on gearing and then we will move on to other
19 issues. So for this afternoon session I would like to ask Martin Lally to start off giving a
20 short statement which will throw open the discussion.

21

22 DR LALLY: Thank you very much. I am very pleased to be here and congratulations
23 to the AER for running a process like this and so by the other places including by the
24 Commerce Commission of New Zealand that I think it has a good effect. That brings
25 me to I guess about one minute and 40 seconds so there's a collection of apparently
26 disparate issues here in the gearing section. But I think that as with any issue to do
27 with cost of capital or regulation generally, one should try to resolve questions by going
28 back to the fundamental principle of setting NPV to zero which I am very pleased to
29 hear Graham was seeking to give pride of place to. So you will hear more from me
30 later on on that question trying to resolve some of these issues about how we would
31 and so forth by going back to that NPV equals zero principle. So it is capable of
32 resolving many of these issues.

33

34 MR HOUSTON: I'm sorry, I'm happy to wait until we get to the substance.

35

36 DR MIRRLEES-BLACK: Thanks very much. There's a number of questions that we
37 have got in the gearing session section and I think you can split them into two. There's
38 questions one might say of the methodology or philosophy of methodology in
39 substance and then there's questions of the detailed and measurement. So I suggest

1 that we start with the principal ones and the first of these is the question of what
2 gearing measure shall we be looking at and for what purposes. So I will throw that
3 question--

4

5 DR LALLY: I'm happy to start on that and then others can contribute if they wish. So
6 we want gearing in for two purposes. One is to de-gear and then regear beta
7 estimates and secondly re-gearing for the WACC formula. Neither of these formulas,
8 the WACC formula or the gearing, regearing formula, they don't drop out of the sky.
9 They are derived and if you want to know how a parameter within a formula is defined,
10 you look at the derivation and the derivation should reveal it and when you look at
11 these derivations for de-gearing and regearing formulas in WACC definition, it is very,
12 very clear from the derivations that we are talking about market values for equity and
13 debt formulas.

14

15 DR MIRRLEES-BLACK: Anyone?

16

17 PROF JOHNSTONE: This is the kind of thing I was saying before how we can quite
18 easily get into a safety string because we go to great lengths to worry about how to
19 measure these, for example, the market values of debt and equity. But the trouble is
20 again it is a circular consideration because they are determined by the regulator's own
21 decisions. So the regulator can't look at the market value of debt and equity and say
22 okay that is an independent - that is an exogenous consideration for us to take into
23 account when we are regulating because rather that is at least largely a consequence
24 of previous regulatory decisions. That is where the frustration for me in this kind of
25 drawn out argument comes from.

26

27 PROF GRAY: So that's an estimation question. You don't disagree then conceptually
28 it must be a market value?

29

30 PROF JOHNSTONE: Yes but the problem is the value market doesn't exist. It is an
31 independent consideration that the regulator doesn't affect. The regulator actually
32 affects that market value.

33

34 DR LALLY: I don't dispute that but just let us suppose that firms for whatever reason
35 have decided on market gearing of 50%, I made that up. Debt being $10 million and
36 equity being $10 million, and the regulator comes along and does something which
37 changes the value of equity. The equity value instead of being 10 million it is now 12
38 million. The debt value is still 10 million. So you would be saying well the leverage
39 ratio has changed; that's all true but that's not where the game ends. If firms having
40 experienced this regulatory action which pushes up the value of equity from 10 to 12
41 million and therefore raises or rather reduces the leverage ratio, firms will presumably
42 say to themselves well what leverage ratio do I like? I still like 50% so they would then

1 make an adjustment so that they bring it back to the 50% they desire. So
2 notwithstanding the fact that regulators do affect the market values of debt and equity,
3 firms can still override them and presumably they do.

4

5 PROF JOHNSTONE: Sure and that goes on forever as the dog chases its tail round
6 and round and where the game settles is going to be almost an accident and there's
7 logging from both sides and the question then is whether that is a good outcome.

8

9 DR LALLY: But I don't think that's a dog chasing its tail. Let's say the regulator does
10 something that causes the firm's equity value to go from 10 to 12 million and as a result
11 its leverage declines and firms then say, we would still like 50%. So to do that they
12 borrow some money and pay it back to equity holders to rebalance the 50. Surely the
13 regulator isn't going to go, I don't like that, we are going to do something to push up
14 their equity value. Again that doesn't--

15

16 PROF JOHNSTONE: But the regulator will react. So each is reacting to the others
17 decisions basically and the question is where does that settle?

18

19 DR LALLY: It seems to be there's only two passes to it. The regulator does something
20 not with the intention of changing the leverage, that is just an accidental by-product.
21 The firm then cleans it up by doing what it wants to, surely that's the end of it.

22

23 PROF JOHNSTONE: That changes the firm's settings which then changes the way
24 the regulator looks at the firm so the regulator in this repeated game can adapt again.
25 So maybe it runs out of changes, it might iterate down to nothing, but the question is
26 where does it iterate down to?

27

28 MR SADEH: I'll give my thoughts earlier in the day on gearing. Things like capital
29 structure as opposed to the cost of finance tend to be stickier and I think the first gate
30 is to say what implied credit rating level do you think a benchmark efficient entity
31 should be? Once you come up to that what should the gearing ratio be now. It is hard
32 to find independent pure measures of market gearing, but if you look at different kinds
33 of measures you will find things that cross check against each other. You have got
34 quite a few averages of a few things that lead to 57%, some that lead to something
35 close to that. It all tells you that you are quite close knowing that my information isn't
36 going to be efficient for the same reasons that you both mentioned about why there's
37 an iteration fact - an iteration loop on debt and it's true. As we know that looking at the
38 equity comps there's also things that distort the market gearing in terms of the way that
39 equity moves.

40

1 So I go back to my point to say that if you have got something that is working and is
2 close and makes sense, then for a longer term measure like gearing I don't think we
3 should be looking at changes because individual calculations change rapidly. I think
4 it's more a cross check in this instance.

5

6 DR MIRRLEES-BLACK: And I think that the question or the question on paper is what
7 is the gearing that should be used, to make an estimate of the cost of capital. And
8 secondly, is what gearing level are you applying in order to calculate the actual cash
9 flows for the revenue? And in terms of the responses I had, there is not much
10 disagreement about using the market measure of gearing for the estimation of the
11 WACC. David, do you disagree with that?

12

13 PROF JOHNSTONE: Are you saying that the sensitivity of the WACC to the gearing
14 adjustment as is proposed in it's different form is not great?

15

16 DR MIRRLEES-BLACK: No, I'm not saying that. I'm saying that it may be true. What I
17 am saying is that in order to estimate the weight of average cost of capital, one should
18 use the market level of gearing make that estimation.

19

20 PROF JOHNSTONE: Using market values are you saying?

21

22 DR MIRRLEES-BLACK: Yes.

23

24 PROF JOHNSTONE: Yes well that's where I find it to be the unsatisfying aspect
25 because of this circularity that I keep on raising.

26

27 DR MIRRLEES-BLACK: What should we use instead?

28

29 PROF JOHNSTONE: Again that's a copout question because maybe the answer to
30 that would be, well, you use good judgment and you think about what the
31 consequences of what you have done before are, you think about it in fundamental
32 terms. You don't just jump to some mechanical solution because it is there and
33 available.

34

35 PROF GRAY: But at the end of the day the AER would have to write down a number.

36

1 PROF JOHNSTONE: Sure.

2

3 PROF GRAY: But what number do you think they should write down? How should
4 they go about that task?

5

6 PROF JOHNSTONE: That's the question for today, right? That's what we are here for
7 so--

8

9 PROF GRAY: Let me suggest what they should do, what they should look at? So in
10 the 2013 guidelines, the AER looked at a whole bunch of comparative businesses and
11 concluded that a market value of 60% was appropriate. They looked at five year
12 averages and 10 year averages and both were very, very close to 60% and they have
13 now redone that analysis, and nothing has changed. In fact the two numbers have got
14 closer to 60%, both of them. The five year average and the 10 year average costs 1,
15 2, 3, 4, 5 different comparative businesses. So even if there is some kind of feedback
16 loop that is going on, it seems like the iterate market value terms and at that 60% is a
17 very stable estimate. And so my suggestion is that that's what the AER should do and
18 it's the number it should be.

19

20 DR LALLY: Could I mention to you that if you look at that table, certainly if you take
21 the findings in your averages they are 57 and 63 as you say. But if we shorten it like
22 we do now, if you take a three year average it is down to 54% and then if you take just
23 the last year it is 52. So the question of what value you should choose for this
24 parameter, it would seem, to be sensitive to the historical period that you are going to
25 use.

26

27 PROF GRAY: Yes. I think the answer to that is something that Ilan told us earlier,
28 there can be accidental changes to market value gearing. So every time a share price
29 goes up or down, the market value gearing will change, and it will take some time for
30 the firm to rebalance and catch up if you like. So that's why I think for this parameter,
31 particularly it is appropriate to look at some averages and not by a particular snapshot
32 point in time because that could lead you astray.

33

34 DR LALLY: Indeed but the question is which historical period to use?

35

36 PROF GRAY: Well I think in this case the fact that we look at five, we look at 10 and
37 we were getting the same number and that was the same with what happened in 2013.
38 That gives a fairly high degree of confidence that that's a pretty robust and stable
39 figure.

40

1 MR SADEH: I think the gearing that comes out of a market calculation is much at risk
2 because of the fluctuation of the equity value than the value of debt as opposed to
3 observations on the things like cost of debt. Risk free rates and observable debt
4 instruments are a pretty clean source of data. There's a lot of extraneous things
5 happening in the gearing count which is - people are not willing to change their capital
6 debt structure every day so you take a long term average if you did. And even when
7 you do, if the number comes out at 61% I don't think that means that you should use a
8 number of 61%. I think that means that justifies the existing position of 60.

9

10 PROF JOHNSTONE: It might be practical as meaning - Martin has mentioned daily
11 period changes things. I think changes in the market value of equity changes things.
12 So there's clearly an arguable range at least and so within that range, if I was a
13 regulator I wouldn't be using some methodological criteria into line picking this one or
14 that one because I just don't think there is any clear answer to that. So then you would
15 have to go back to what is the judgmental outcome? As a matter of judgment, what is
16 the effect on the tariff scheme on the WACC? And then that opens up a much bigger
17 perspective than a narrow technical one that three months is better than three years or
18 whatever, whatever the methodological arbitrary approach is of those that could be
19 taken.

20

21 PROF GRAY: What would be involved in the application of the judgment as you
22 understand?

23

24 PROF JOHNSTONE: Common sense for one thing, not just mechanically adopting
25 some methodology because it's been done before and the numbers are written on a
26 piece of paper before. It has to be prospectively applied and consideration given to the
27 weaknesses of the methodology and now one of those, I think, Ilan's said was true,
28 equity values are up and down, they are driven by the regulator. The regulator is
29 watching themselves when they are looking at the equity values effectively. They are
30 watching the effects of their own decisions. So if you get hung up on that number and
31 plug it into a debt equity formula, then you're kidding yourself in terms of precision.
32 This is this fake position that we talked about before.

33

34 DR LALLY: Can I offer a purely statistical way of resolving the question of which
35 historical period to use? When you come up with this number, 60 or whatever, you are
36 applying it for a regulatory control period. You are applying it for X years into the future
37 and for argument's sake, let's just suppose that X years into the future is five years. So
38 you are trying to predict the value, the average value for a time series into the future
39 and what we do know about this time series is that it is mean reverted and what you
40 could do is choose the historical period to predict average leverage over the next five
41 years that gives the best predictor of the future, so a purely statistical exercise. So the
42 question of which historical period to use could be resolved in a purely statistical
43 fashion.

44

PROF JOHNSTONE: But just by one criterion that is not the be all end all way to do it. It is one - it's potentially plausible but you can't lay that down as if, no, this is the answer.

DR LALLY: But if you accept the premise that what we are trying to do for regulatory purposes here is to predict the average leverage over the next say five years, if you accept that premise then surely it follows you should choose the historical period for estimation that provides the best predictor.

DR MIRRLEES-BLACK: I have a question which you may be about to answer but my question is are you trying to do that, or are you trying to calculate what the gearing is of the benchmark efficient entity and if that's what you're trying to do, then it is not forecast - you are not trying to forecast average gearing, you're trying to estimate what is the optimal gearing for this--

DR LALLY: You are trying to estimate optimal gearing but you - as a proxy for optimal you take an average over some comparatist. And if that's what you're doing then you've moved from optimal, you've deferred to the data on the question of optimal, okay, you're not trying to decide for yourself what optimal is, you're going to defer to what firms actually do.

DR MIRRLEES-BLACK: Yes

DR LALLY: As a proxy for optimal and if you're deferring to what firms actually do then what you want is a predictor of average gearing over the next five years and therefore you've used an historical period that provides the best predictor.

MR HOUSTON: I'm not sure that it is. You're not making one prediction for one set of five years, there setting changes and guidelines that have been applied and multiple determinations over the next four years. But there's not a precise period that we're trying to predict and it doesn't seem to me that we even want a precise predictor for any one of those periods. Surely as a matter of practicality it's likely that the optimal gearing is not actually a precise number because although we know it's efficient for companies to have leverage and we know that 100% or 99% leverage is not efficient and we know that 0% leverage is not efficient. It's quite probable that there's a fairly broad range of values around some midpoint area where it doesn't make much difference to the cost of capital for a benchmark entity.

I think it's also clear that any observation of gearing, it's a fact that we can observe, will not be stable even if there is an optimal single point because of the realities of debt raising and realities of business's capital programs, ebbing and flowing, will mean that an optimally-financed business's measured gearing will vary from one year to the next. So I don't see the kind of changes or the differences that we observe in this table as

1 having any meaning whatsoever other than that they are in the same ballpark that we
2 thought they were in last time. So I think your very prescription in saying we're trying to
3 get some precise predictor based on a statistical series is a bit misplaced. We're
4 actually trying to arrive at a number that - there's certainly quite a range of numbers
5 that would be correct or not incorrect - and really not much is to be gained by
6 squabbling over whether it's 60% or maybe it's 55% or maybe it's 65% depending on
7 how the series fluctuates. It seems to be that there's a pretty clear message out here
8 that this is astable variable.

9

10 The perhaps change as we see in the last recent times are quite explicable by
11 reference to what we're seeing broadly in equity market values changing. Nothing to
12 do with regulatory framework by the way. So I think this is actually a pretty simple
13 question that deserves a very simple decision.

14

15 PROF GRAY: I think picking up on one of Graham's points from earlier, maybe have
16 regard to the incentives of whoever is making a submission. So the ENA I know in
17 their submission proposed just leaving that number at 60%. If the AER applies the
18 same process that it did in the 2013 guideline and leverage increases the allowed
19 return goes up.

20

21 DR LALLY: In fact what one can do is take the definition of WACC put into it the
22 CAPM formula for the cost of equity And into the CAPM formula for the cost of equity
23 you have the equity beta and you stick into that the AER's preferred formula and when
24 you run that through the mathematics you will find that there is a relationship between
25 that and the level of debt and it's not flat.

26

27 MR HOUSTON: Well that's a creation of the formula rather than a depiction of
28 financial theory so we need to be careful about being misled by that phenomenon.

29

30 DR LALLY: But if we are going to use a particular model for the cost of equity and use
31 a particular de-gearing formula we surely should take some notice of what the logical
32 consequences of that are for the relationship between WACC and leverage and it's not
33 flat. If it were flat then I would agree with you Greg a different scenario but if it isn't flat
34 it can make a difference.

35

36 PROF GRAY: But that's kind of more reason to stick with a hitherto well accepted
37 60%. Because otherwise, taking account of the slope of that line you might be
38 receiving opportunistic--

39

40 MR SADEH: That's right, the WACC isn't constant because gearing and cost of equity
41 and cost of debt do not offset each other there for example the cost of debt is not linear

1 or logarithmic it's a step change on ratings bands. it goes back to an investor
2 perspective about confidence, if there isn't a significantly better outcome by looking at
3 a different data or a different methodology then why change. So when I think about
4 cost of financing that is more observable. Hearing measures on market value, that
5 makes sense but they are still clouded by a number of issues I think people have
6 mentioned before. The nature of unregulated, the amount of unregulated revenue in
7 the business and that is a bigger piece of Australian networks than overseas networks,
8 that's just the way that our regime works when it comes to putting in new connections.

9

10 So I think from a dependability point of view it is much easier to defend the data set
11 that you're using for cost of funds but not for a hearing measure which is why I
12 personally would advocate to have it as a cross-check rather than an absolute
13 formulae application.

14

15 DR MIRRLEES-BLACK: Can I raise a question which may add to the debate? What
16 are the appropriate comparators in this set. We're down to three and we're just using
17 listed entities and whether it's using market value gearing which requires you to have a
18 listing in order to calculate. But what do you as a group think are the appropriate
19 comparators to gearing?

20

21 DR LALLY: Well I agree with the AER's definition which it applies equally to the credit
22 rating and to leverage that it's a pure play regulated energy business in Australia. That
23 seems like a pretty good definition of the comparators.

24

25 DR MIRRLEES-BLACK: And what if that became an empty set?

26

27 DR LALLY: Well we're not at that point. I think a better question would be given that
28 we're at three is that now too small a number and should we expand the definition to
29 give us a larger number? I think that's the right question. If we ever do get to an
30 empty set we'll have to face that question but we don't need to so why ask a question
31 that we don't yet need to answer?

32

33 MR SADEH: Gearing ratios can tend to be the hardest things to observe because
34 there are different ways of measuring here and you know a lot of people do things like
35 a debt to EBITDA which has no meaning in a regulated asset. When it comes to debt
36 to a market type value and equity value it is very hard to get data from unlisted
37 networks which are the majority of the networks. The book value of equity makes no
38 good sense, particularly over time. And these unlisted valuations aren't published, I
39 have no idea what my peers' equity values actually would be so I'd have no idea about
40 what their actual gearing would be. It is reasonable and going to be pretty accurate to
41 look at the existing list of comparators and look through any adjustments you need to
42 make so you're looking at their effective underlying asset gearings.

1

2 You don't get confused or look at any holdco debt or any shareholder loans. If you can
3 look at their average rating compared with the intended benchmark efficient energy
4 rating that you want to get and then you'll see that cross-check measures like debt to
5 RAB that you can look will tend to be pretty similar. Now debt to RAB itself is not the
6 right measure but as I said because they'll tend to cluster you can equate the list of
7 gearing to be pretty close. It's just again another reason that it's a cross-check you
8 shouldn't rely on it scientifically.

9

10 DR MIRRLEES-BLACK: So in summary we're saying that AER should only look at
11 gearing measured against market values. But you're saying there is some information
12 in debt as a precaution of regulatory asset base? It will--

13

14 MR SADEH: Debt to RAB by itself is a meaningless measure of gearing. It gets things
15 quite wrong when you look between assets. I would love for there to be more
16 observable points of debt to total market value but it's impossible to get them from
17 different unlisted investors. We can go through the reasons that debt to RAB is
18 misleading and unregulated revenue is a second point for that. Another, is the fact is
19 that the value of the regulated business is not simply RAB it's also an operating
20 component to business.

21

22 The rating agencies take that into account because rating agencies don't just look at
23 debt to RAB, they can't look at debt to enterprise value because they can't find it. They
24 look at debt to RAB but they say that's one measure and I'll look at other measures
25 across the cash flow capacity of the company like Free Funds from Operations -
26 FFO/Interest or FFO/Debt.. and other things like that. So to look at debt to RAB can be
27 quite misleading particularly when you get into really high or really low interest rate
28 environments.

29

30 DR MIRRLEES-BLACK: But in applying the formula to calculate revenues the AER is
31 using debt to RAB because when you're calculating revenues you're saying revenue is
32 cost of debt x gearing x RAB and then--

33

34 MR SADEH: Well it's because it's applied as a rate of return on the regulated asset
35 base.

36

37 DR MIRRLEES-BLACK: So implicitly there's a relationship between gearing
38 and - gearing used in the market value, because that's what's been measured, and
39 then gearing used in order to determine a return. So you've got use of gearing using
40 the same gearing number but used for different purposes, so you'd--

41

1 MR SADEH: Well they're not the same number. There will tend to be a correlation
2 between the two but the debt to RAB percentage is higher than the gearing
3 percentage. Why is that? There's gearing capacity bought out of the rest of the rest of
4 the regulated cash flows that aren't a function of the rate of return .
5
6 DR MIRRLEES-BLACK: Yes, but the gearing of the market level is used as a proxy
7 then to apply to calculate the revenues. So therefore implicitly the regulator is making
8 the assumption that the RAB gearing is the same as the market gearing.
9
10 MR SADEH: Yes.
11
12 DR MIRRLEES-BLACK: So therefore wouldn't it therefore be the case that gearing as
13 a percentage of RAB provides some information about gearing that could be used to
14 help the AER to work out what an appropriate level of gearing is?
15
16 MR SADEH: Not to say that that is the level of gearing.
17
18 DR MIRRLEES-BLACK: Exactly. Not to say that it is the level but to say that there is
19 information contained in that which can be used to inform decisions about what gearing
20 is.
21
22 MR SADEH: Let me give you an example. If there were only one listed comparable
23 level and it had market gearing of X and its debt to RAB was completely out of sync
24 with all the unlisted observations that you could get from Moody's then you would say
25 that gearing's not reflective of the rest of the market. But if it's debt to RAB is quite
26 similar to all the other ones that you want for that benchmark rating level then that
27 would tell you that the market gearing coming out of that observation is probably
28 reasonable.
29
30 DR MIRRLEES-BLACK: My question is does market - and I think you said yes to this
31 but with a nuance. My question was does debt to RAB provide any information to help
32 AER work out gearing? I think you said it contains some information, as long as you
33 don't say it's the same it contains some information. But I'd be interested to hear the
34 views of others, does debt to RAB contain any information which is useful in order to
35 estimate gearing? In particular in a regime where we don't have many comparators.
36
37 PROF GRAY: I think we're making work for ourselves. I know what you're saying but I
38 think we're making work for ourselves. Like relative to beta and market risk premium I
39 think table 3 here is a slam-dunk of 60%.

1

2 DR LALLY: So long as you're happy with the methodology that's used to generate
3 those numbers. Such as how--

4

5 PROF GRAY: Which I am. Which I am.

6

7 PROF JOHNSTONE: But now after all this discussion you could hardly say there's a
8 slam-dunk anywhere, I mean it's been so far off a slam-dunk like that--

9

10 DR MIRRLEES-BLACK: But I think there is concurrent around 4 that 60% is there. So
11 David--

12

13 PROF JOHNSTONE: I think the account is that there's an arguable range--

14

15 DR MIRRLEES-BLACK: Yes.

16

17 MR SADEH: I just want to be clear. Ilandoesn't want there to be pragmatism and
18 judgment around this number. I believe there should absolutely be a fixed number
19 because I have less faith in the objectivity of the data sources around them, which I
20 think cross-check to the number of 60%. I mean, I've looked at different measures for
21 myself, whether they be transaction comparables, which have comparatively issues
22 around level of unregulated debt. I've looked at various gearing ratios and they all
23 point to 60%.

24

25 DR MIRRLEES-BLACK: Do you have any questions?

26

27 MS CIFUENTES: No, but I think David's point goes to - and I don't want to be putting
28 words in your mouth, David, but I think what you're saying is you're all asking the
29 wrong question in a sense.

30

31 PROF JOHNSTONE: I get that impression a lot in this kind of discussion. I think it's
32 really easy not to see the wood for the trees in this kind of thing. I mean, for example,
33 when you're talking about gearing ratios being measured against RAB or against
34 market value, we've already seen that there's market multiples that are rather quite
35 large, so these numbers are quite different and could change the gearing ratio a lot,
36 depending on which methodology you chose. So there's a lot of pragmatism called for
37 because there's no clarity about what is the right answer and, again, that comes back

1 to the fact that these entities don't exist exogenously out in the market. We don't just
2 look out the window and look at them; instead we actually govern them.

3

4 PROF GRAY: So would RAB multiples be used to inform the estimate of gearing?

5

6 PROF JOHNSTONE: I'd be very distrustful of RAB because RAB is this made-up
7 number. You know, it's got replacement costs in it from the old assets, it's got
8 whatever counting vagaries are involved and, again, once an asset is invested in, it
9 goes into RAB at whatever cost, so that's, potentially, a blank cheque and, therefore,
10 not a number that you should give any objectivity to.

11

12 MR HOUSTON: David, what I don't really get is what would be - you know, if we gave
13 you the task and you came back--

14

15 PROF JOHNSTONE: But it's not my task; it's the regulator's task.

16

17 MR HOUSTON: What would you give us?

18

19 MS CIFUENTES: It is our task, but that's what we've got you here for too as well to
20 help us with that, I think you've told us what to avoid. So what would you offer as--

21

22 PROF JOHNSTONE: But you're looking for an easy solution and I don't think you're
23 going to find one.

24

25 MS CIFUENTES: If I was looking for an easy solution, I wouldn't be in this job, but--

26

27 PROF JOHNSTONE: But you're asking me for an easy solution. You're saying "Okay,
28 what is it?".

29

30 MR COX: I guess my question is what are we all missing here? You know, things we
31 can agree about. There's an underlying agreement. Have we missed something that
32 hasn't been articulated?

33

1 PROF JOHNSTONE: You're suggesting that it's a done deal and all I'm saying is that
2 the level of discussion and this limit about methodology suggests that even amongst
3 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 with each
6 different form of data source which suggests to me that clustering around a sensible
7 outcome rather than an exact calculation for this, given all the limitations, is sensible.

8

9 PROF JOHNSTONE: I think I'm saying the same thing. A sensible outcome might
10 be - the question is what is that?

11

12 MR HOUSTON: Well, I think at least quite a few people here are saying 60% looking
13 at this table, we're all comfortable with the method by which these observations are
14 being derived, which is a market value measure, and we're all comfortable with the sort
15 of direction or value to which they seem to be pointing and that, I think, seems to be
16 what many of us is saying is a sensible outcome. So I'm very happy to hear what an
17 alternative sensible outcome would look like, but at the moment I'm completely
18 confused as to what you're suggesting that would be.

19

20 PROF JOHNSTONE: You're saying it's a matter of vote and I'm saying it's a matter of
21 regulatory judgment. That's what it comes down to.

22

23 MR HOUSTON: But where does regulatory judgment takes us? I mean, I'm happy to
24 hear about a different method, but I don't get what that is and where it ends up.

25

26 PROF JOHNSTONE: Well, we've seen - we've heard enough methods to know that
27 there is a range already. So there's regulatory judgment even within that range let
28 alone outside that range.

29

30 MR COX: We're all here to have you articulate it if you can help us.

31

32 PROF JOHNSTONE: Okay, so if it was me, I would work through the consequences
33 because I don't think there's going to be an answer that I can just plug in as the right
34 answer. So work through the consequences and then work back and think about the
35 upshot, and so that's a bit of judgment to-ing and fro-ing. You know, you're saying that
36 you've got a number and you're asking me for a number. I would never say there is a
37 number. You've got a favourite number.

38

1 MR COX: If we can just go back, I think one of the things Martin said was that the rate
2 return varies with the level of gearing. In what way does it vary and how do you think
3 that might be relevant today?

4

5 DR LALLY: As I mentioned, if you take WACC, stick in the formula for the cost of
6 equity, enter that and stick in the AER's formula for the equity beta, what you get is the
7 weighted average cost of capital is equal to the unlevered cost of capital, minus a term
8 which reflects the tax advantage of leverage. So you're subtracting something, the tax
9 advantage of debt, and then you add on a term which reflects the debt risk premium.
10 So it depends upon the relative sizes of this debt risk premium term and the tax
11 deduction on debt, whether the relationship between WACC and gearing is declining or
12 increasing.

13

14 The implications of that are because it's probably not flat, if the relationship were flat,
15 we could just stop, it wouldn't matter. We wouldn't even need to think. You would just
16 take the unlevered cost of capital, but because it's not flat or probably not flat, then it's
17 going to matter to the allowed costs of capital, whether you choose a gearing of 60% or
18 55. That's going push up or reduce the allowed revenues for regulated businesses. Of
19 course, that's money, so that matters.

20

21 DR MIRRLEES-BLACK: In that formula, how would you relate the debt premium to the
22 gearing because, of course, there is a relationship there and when one is making
23 estimates, one keeps the debt premium static because you're keeping your credit
24 rating assumptions constant, so it's okay for an estimation, but if you're making a
25 judgment as to where it should be based on, whether it's increasing with gearing or
26 decreasing with gearing, how would you do that?

27

28 DR LALLY: Okay. The relationship, clearly, is positive. The higher the leverage the
29 higher the premium. How do you come up with an estimate of that? Well, empirically I
30 would say. I mean, we can look at a range of firms at the same credit rating and we
31 can see differences in leverage, differences in their debt premium, so empirically you
32 would get an estimate.

33

34 PROF JOHNSTONE: Which, of course, is the incentive for the arguments at the top
35 end of the range and why other parties would argue at the bottom end of the range.

36

37 DR MIRRLEES-BLACK: And then there's also a question as to how material is the
38 difference within the reasonable range within which we're operating, and whether the
39 additional value that you can get justifies the additional complexity in terms of the
40 calculation.

41

1 PROF JOHNSTONE: Yes. It may very well be that these two are fixed, which appear
2 in the formula, pretty much wash out, and if they do, it strengthens the point for not
3 spending too much time on this, but if they don't wash out and the difference is
4 substantial, it argues for spending more time thinking about this question.

5

6 PROF GRAY: If it's upward sloping, a business would receive more revenues if the
7 number went up, but the businesses, in fact, submit in favour of leaving it where it is. I
8 think that's telling as well.

9

10 MR SADEH: I mean, that's one thing. Irrespective of the gearing that's notionally told
11 to someone, they will always take into account you've got multi-million dollar networks
12 that need to keep certainly investment grade ratings otherwise they can't issue enough
13 debt in the market. So there's a level of prudency within the networks themselves that
14 would say irrespective of what allowance you ever gave us, if you didn't give us
15 enough, we still would have to pay more because we just have to.

16

17 MR HOUSTON: May I, perhaps, try and put a slightly - I think not inconsistent -
18 explanation on that given by Martin, but for those that are thinking of doing some
19 evening reading on this, I would recommend, actually, that you - it's about ten or 15
20 pages – review the New Zealand High Court's discussion of the so-called leverage
21 anomaly in the CAPM, from the appeal that was lodged or made in New Zealand in
22 relation to the Commerce Commission’s, Input Methodologies first decision back in
23 2009 and the appeal was a year or two later. It's a very clear discussion of some of the
24 issues here, and I'm going to try and distil very quickly.

25

26 The essence of it is that the CAPM model is a model about equity returns as it relates
27 to systematic risk to everything, not just the equity market, and that means that debt
28 will always share to some extent a degree of systematic risk, and that properly done is
29 captured in the role of a debt beta in the CAPM formula. The problem with that is it is
30 very hard to estimate empirically what a debt beta is, because there are other reasons
31 that the debt risk premium catches other affects ondebt. So it's practically a very
32 difficult thing to measure.

33

34 As a consequence, the formula you've got here has no debt beta in it. The
35 consequence, though, is if within that formula you start switching for different
36 proportions of debt and equity, you change the weighted average cost of capital that
37 the formula gives you, even though the financial theorywould say that across a
38 reasonably broad range, let's say, not scientifically, 20%, you wouldn't expect the costs
39 of capital to change within a reasonable range of gearing levels. But because we put
40 aside the work that debtors normally do, which is capturing a little bit of systematic risk,
41 the consequence of the formula is that when you change gearing you get a different
42 WACC.

43

1 That's all written up very clearly in that judgment in plain English terms, and I think
2 that's really what we're talking about.

3

4 In consequence for gearing, the most important thing is that you adopt - if you adopt a
5 gearing estimate in your formula that's in the same ballpark at the observations you're
6 using to reach your benchmark gearing level and also for your beta estimation level,
7 and that has its own re-levering process, then you should be fine. But I think what that
8 anomaly of the formula should tell you is that you would be cautious about changing
9 the gearing assumption you use without any good long-term structural reasoning for
10 doing so because you will change the cost of capital, up and down, depending on
11 which way you were going, that results, for reasons that are not fundamentally
12 justifiable, all coming back to the absence of a debt beta.

13

14 So I don't know if that's helpful, but if I haven't.

15

16 PROF GRAY: The AER would only haveto do that night-time reading if they were
17 minded to change.

18

19 MR HOUSTON: Correct.

20

21 MR SADEH: We can confirm--

22

23 MS CIFUENTES: We do have an open mind on all these matters, as you know,
24 Stephen.

25

26 DR LALLY: There's an additional point here. David has referred to the circularity that
27 results from the actions the regulator and whilst I don't see that as a problem here,
28 because it is rapidly extinguished through our repetitive process, there is another
29 circularity that is involved here and that is let us just suppose for argument's sake to
30 emphasise the point, supposing the true WACC is flat with leverage, so it doesn't make
31 any difference what leverage a firm adopts, its WACC is the same, but because of the
32 way the AER defines WACC, it uses the CAPM and it uses a particular gearing
33 formula, supposing the effect of that were that the WACC estimated by the AER went
34 up with leverage.

35

36 Now, if we were in that kind of world, where true WACC is flat with leverage but the
37 AER's formula shows it going upwards, we would expect that regulated businesses
38 would crank up their leverage, knowing it wouldn't hurt their WACC, but it would get

1 them more revenue. And, these firms, by cranking up their leverage, would then be
2 presenting the very market numbers that would be going in to the formula.

3

4 So, whilst the AER might think we are exogenously getting these leverage numbers
5 from somewhere and running them into a formula and it all looks kosher, they have, in
6 fact, been gamed by the regulated firms, because the regulated firms manipulated their
7 leverage knowing that this was going on. Now, I'm not saying that this is true. I'm not
8 saying true WACC is flat. I'm not saying that in the AER's formula, it goes up. But, I'm
9 just identifying the possibility that the AER might be being gamed in this area.

10

11 DR MIRRLEES-BLACK: Have you got any other issues on this area that you want to
12 cover? There's one issue which - there are some issues of detailed measurement
13 which we could cover, or we could just deal in the paper afterwards. But, there is an
14 issue on the re-leveraging of companies with the actual calculation for re-leveraging
15 which there's a couple of people who want to make comments on. Stephen, do you
16 want to?

17

18 PROF GRAY: What - yeah. Start with that. So, the AER's current approach is to
19 recognise that prior ranking debt finance does, other things equal, increase the risk to
20 residual equity holders. And so, I think that point is not at all controversial. That's a
21 standard results in all the textbooks and it even accords with common sense. The
22 more debt holders you have lined up in front of you with a prior ranking claim, other
23 things equal, the equity - the risk of the residual equity holders increases.

24

25 So, there are two questions that need to be resolved. One is what formula is going to
26 be used to do the unlevering and re-levering, because we need to produce equity
27 betas on a like with like basis at 60% gearing. And so, I'll deal with that question first.
28 So, there are a number of different formulas that you will see in the literature for that
29 step of unlevering and re-levering.

30

31 One of those formulas, the Miles Ezzell formula, is appropriate for the case where
32 you've got a constant proportion of debt finance, which is what we have here and
33 what's built into the PTRM. So, the fact that there are other formulas that will deal with
34 managing other debt management policies - the constant amount of debt, for
35 example - that's all irrelevant. I think there is one formula mathematically that applies
36 with a constant proportion of debt finance so that's--

37

38 DR LALLY: But only if the debt betas are treated as zero?

39

40 PROF GRAY: Well, no. I'm coming to that. That's my second point, right? So, the
41 formula itself - and that formula has a debt beta in it. And so, that formula, I think

1 there's no question that that's the one that must be used. So, there's no, I think, real
2 debate about that. Within that formula, there's a debt beta, right, which would need to
3 be theoretically included. Market practice is very much to use a debt beta of zero, and
4 that's the approach that the AER's always adopted so far.

5

6 So, the question is, if the debt beta is higher than that - say, .1 for example, if that's the
7 debt beta - what difference would that make? So, some papers that Graham and
8 co-authors have written in the past have indicated that that will have some effect on the
9 results and that the AER would need to take into account the fact that they're using a
10 debt beta of zero; maybe it should be .1 or something of that nature.

11

12 So, I think the appropriate approach then for a regulator is to actually quantify what
13 difference would it make, if I did do unlevering and re-levering with the beta of .1,
14 would that make a material difference? So, I've run some numbers and maybe we can
15 include a little table in the joint report showing that it makes way less difference than
16 the estimation error, on beta. So, if you include a debt beta of .1 or .15 or something,
17 we're talking about changing the second decimal point in our beta estimates, by not
18 much.

19 And so, it's well within the standard errors of the beta estimates so, you know, we need
20 more, I think, in this process than to say this could be an issue and therefore let's not
21 re-lever. I think if there are things that could be an issue, let's try to quantify them and
22 determine is it - (a) is it an issue; and (b) is it a very big issue. And, that should be an
23 approach adopted in general.

24

25 DR LALLY: I agree with that, and I would add that debt beta estimates as high as .15
26 are far too high. The true values, in my view, are much lower, but that simply
27 emphasises the point Stephen's making that it doesn't make very much difference at
28 the end.

29

30 PROF JOHNSTONE: Yeah. I think the point of sensitivity analysis to all these things
31 is really valid and you know, we need to establish what the range of end consequences
32 is and then think about it hard.

33

34 DR MIRRLEES-BLACK: We're agreed on that then.

35

36 PROF JOHNSTONE: That's quicker than I thought.

37

38 DR MIRRLEES-BLACK: That's good. Do you want to spend time on the details of this
39 beta estimation, or are you happy for that to be dealt with in the joint paper?

1

2 MS CIFUENTES: I'm happy for it to be dealt with in the joint paper.

3

4 MS CONBOY: As am I.

5

6 DR MIRRLEES-BLACK: We'll do it that way then. Thank you.

7

8 MS CIFUENTES: Just if I can, this is more a broader question. So, we've been talking
9 about the sensitivity analysis, and materiality was one of the points that I raised in the
10 introduction; if we could consider some more materiality of this. So, if we do that with
11 all of the variables, at what point do you, sort of, optimise it? And, I think this is going
12 back to David's point; what is the optimal solution? Because, if you look at all the
13 variables and the ranges - and yes, we can do sensitivity analysis, but it's almost like in
14 funds management where you sort of, try and optimise a portfolio, there are so many
15 variables. So, do you have any thoughts on that process and how meaningful it would
16 be?

17

18 PROF JOHNSTONE: Well, to me, that process is actually just getting into the - into
19 the ball park, and admitting that we're not going to know where we are - when we're at
20 the right spot in the ball park. And so, that's why the question from you at the start of
21 the day about judgment rearing its head is inevitable.

22

23 MS CIFUENTES: So, with the--

24 PROF JOHNSTONE: And, the luck with these decisions don't last for absolutely ever.

25

26 PROF GRAY: The New Zealand Commerce Commission has a formal process for
27 determining how judgment is exercised. So, they take into account the distribution, if
28 you like, of each parameter and how that aggregates up to an uncertainty about the
29 WACC and then they adopt an allowed return, and I think it's now at the 67th
30 percentile, on the basis that - the judgment should be applied on the basis that setting
31 the number too low produces a more severe outcome than setting the number too
32 high. So, it's an institutionalised way of balancing those risks. I'm just saying, that's a
33 way that other regulators have applied this.

34

35 DR LALLY: Right. But, I think the point of discussion here was the merits of looking at
36 the sensitivity of various parameters, and undisputedly, MRP is a big one, beta's a big
37 one, whether to include debt betas is way down the bottom. So, that's one issue. A
38 quite separate issue is that what the Commerce Commission is doing, it's - unlike the
39 AER, which just comes to its best estimate of WACC - what the Commerce

1 Commission is doing is coming to - it recognises that whatever estimate you come to
2 for WACC, it could be wrong; the true number could be less than that or more than
3 that, and it calculatedly errs on the high side to give some protection against estimation
4 error.

5

6 Now, that additional step the Commerce Commission is going through has no
7 counterpart to what the AER is doing, and it may just be that the AER deals with the
8 same issue by being more generous with its estimates of individual parameters.

9

10 MS CIFUENTES: Sorry, if I can just get that clear in my mind. So, the New Zealand
11 Commerce Commission, its estimate is typically conservative?

12

13 DR LALLY: It's on the high side.

14

15 MS CIFUENTES: It's on the high side?

16

17 DR LALLY: Yes.

18

19 MS CIFUENTES: So, how did the consumer groups in New Zealand deal with that?

20

21 DR LALLY: Well, naturally, they weren't very happy about it. But, I would say to them
22 that if you are a consumer, the worst fear that you have in this area is not that your
23 power bill is going to be a little bit high, but that the true WACC has been accidentally
24 underestimated and therefore, the regulated businesses lose interest in investing and
25 then the network runs down and then your lights don't go on one night. And, as a
26 consumer, that is likely to be the bigger fear.

27

28 MS CIFUENTES: So, it was focusing on the--

29

30 PROF JOHNSTONE: But, it's a long way from--

31

32 MS CIFUENTES: Sorry. If I can just - so it was focusing more on the longer term
33 interests of the consumers and the NZCC was able to convey that to the satisfaction of
34 consumers?

35

1 DR LALLY: That's a matter that I can't answer. I mean, the average consumer in New
2 Zealand, a person like me, doesn't really have any input into this process. The kind of
3 industry body may or may not be reflective of the views of the average consumer. I'm
4 simply giving you my own perspective as a consumer of electricity in New Zealand. I
5 don't mind paying a little bit extra to give me protection against the possibility of the
6 lights going out.

7 MS CIFUENTES: Thank you

8 PROF JOHNSTONE: And, the opposite risk to the one I was talking about is the risk
9 of one paying a lot for electricity for a long time to come, in perpetuity, effectively. And
10 I mean, if there is a risk that the investors will lose interest and the infrastructure won't
11 be built at the speed or based that the speed it should be, then that doesn't happen
12 overnight. And, you know, that's the whole idea of these ..(not transcribable).. to
13 actually correct for such a thing if it were to happen.

14

15 I mean, I think a lot of people in the outside world would say that the greater risk at the
16 moment is that the settings have been too generous and that the users are actually the
17 ones that are actually got the long term pain. And, that's not - they can't reverse that.

18

19 MR COX: Could I just go back to Stephen's talking about having, sort of, uncertainty
20 bounds or whatever around each parameter? If I understand that correctly, then you
21 sort of move up from that and look at the joint distribution and all the other parameters.
22 What issues are involved in actually setting bands around parameters to indicate the
23 range of uncertainty?

24

25 PROF GRAY: Well, maybe Martin would be better placed to answer that. He's
26 advising the New Zealand Commerce Commission on--

27

28 MR COX: Yes, and how would you aggregate up to get a joint distribution?

29

30 DR LALLY: If you take an individual parameter such as beta, if you run a regression
31 exercise, what comes out of that exercise is a point estimate of the beta, but it's a
32 statistical exercise. What you also get coming out of it is a standard error of the
33 estimate. So, that gives you a standard deviation of distribution.

34

35 To aggregate up, there is a convenient property that estimation errors in these
36 parameters are essentially uncorrelated. If your beta estimate is too high based on
37 running your regression over the last five or ten years, it's probably not correlated
38 much with an MRP estimate that has been generated using a hundred and something
39 years of data. So, if you don't have correlation, then the laws of mathematics will
40 enable you to generate the standard deviation for the WACC distribution from the

1 standard deviations of the individual components, and that is the way it was done by
2 the Commerce Commission.

3

4 MR COX: When you get into MRP, it seems to a bit more judgmental. It's not quite as
5 simple as beta, which is a comparable estimation.

6

7 DR LALLY: Well, what will happen with the MRP is that if you estimate that using the
8 last 120 years of data, just as with beta, you get a point estimate and you get a
9 standard deviation. But, what complicates it is that typically, regulators will arrive at an
10 MRP estimate by looking at a range of different estimation methods. So, what the
11 Commission did was, it said well we've arrived at our MRP estimate by putting, let us
12 say, equal weight on each of five methods. And, by the laws of mathematics, you can
13 then figure out, from the standard errors on the individual estimates, what the standard
14 error would be on an equally weighted average of those five.

15

16 MR COX: So, semi-independence of something.

17

18 PROF JOHNSTONE: Again, it's all based on data items, so it pseudoscience to an
19 extent because as we know it's not like data coming out of a stationary physical
20 system. And if you go back a lot of years we're looking at the world altogether. If
21 we've only got a short period of data we've got a lot of noise in our results. So we've
22 got this appearance of rigour when in fact, I think, social sciences generally just haven't
23 got that - so that's what I find to be quite threatening. The over-trust in statistical
24 estimates in these changing social context. The maths is good, but it's garbage
25 in/garbage out. That's the problem.

26

27 DR LALLY: I think you've got a choice though - in this area. If you don't go through
28 the kind of formal process that the Commerce Commission has gone through, you are
29 still left with the inconvenient fact that if you underestimate your WACC it's potentially a
30 bigger problem, even for consumers, than if you overestimate it. And the
31 underestimation fear is that businesses won't invest and the network runs down. So
32 given that asymmetry there's two ways of dealing with it. One is the former process
33 that the Commerce Commission has gone through, and the other way of dealing with
34 it - which isn't formal, or explicit, but presumably goes on, is to be a little bit more
35 generous in respect of each individual parameter. But without realising what the
36 cumulative effect of all those little bits of generosity are in various places. So the
37 people who do it with a little bit of generosity on beta, and a little bit of generosity on
38 MRP may not realise what the aggregate effect of all those generosities is. Whereas
39 at least the Commerce Commission knows what - or at least has a sense on what the
40 aggregate situation is.

41

1 PROF JOHNSTONE: That's an extremely good point. I think they compound on one
2 another, because they're more applicative.

3

4 DR LALLY: Yes.

5

6 PROF JOHNSTONE: And I think that's why you've got to work right through to the end
7 result of all the different settings, and then come back and reconsider them.

8

9 DR MIRRLEES-BLACK: I think it's something - I mean, this wasn't actually part of the
10 topic, but I think it's something that we should - we can make some comment on in the
11 joint paper, and if you would find it valuable, discuss what it would mean and can add a
12 little bit of nuance to it in the next session - if that's helpful. Any other questions on this
13 now?

14

15 MS CIFUENTES: No, I thought you said gearing was going to be straightforward topic.
16 And we're not even hearing from Professor Partington.

17

18 DR LALLY: Administratively Jonathan, once we move off gearing, does Graham then
19 come back into the chair? Yes? All right.

20

21 DR MIRRLEES-BLACK: Thank you very much Martin. Now, while Martin is moving
22 and being replaced by Graham Partington - this next session - for the next half
23 hour - it's about - the beginning of financial performance measures. So we're dealing
24 with a couple of issues before afternoon tea, and then we'll be discussing RAB
25 multiples and financeability after afternoon tea. So now I'd like to invite David to
26 kick-off the discussion - it's about two questions: one is what allows us ex post to think
27 that we may have achieved the National electricity objective and the National gas
28 objective; but do profitability measure tell us anything - or what can they tell us, about
29 whether we've achieved those objectives, or what impact do they have on the rate of
30 return guideline?

31

32 PROF JOHNSTONE: I'll just make two quick points. I think ex post it would be a very
33 good thing for the AER to do a cash flow analysis of these businesses to actually
34 understand exactly what's happened - money in/money out - to get down to
35 fundamentals and to understand their futures, it's really good to understand their past, I
36 would think? And then secondly, the fact of market RAB multiples being greater than
37 one is a worrying sign, I would think, and it will take a lot of explanation - especially
38 when they're significantly greater than one - that's got to be a symptom of a very
39 attractive asset in that the market is prepared to pay greater than the theoretical value
40 of a different aspect of the business, by that much money. Now, as a measure of

1 financial performance, and potential, there's got to be a lot in that - the market's
2 speaking.

3

4 DR MIRRLEES-BLACK: And in terms of this next half hour, one of the issues is
5 profitability measures, and I know the AER has done work on profitability measures. In
6 part it's reported on in the papers which have submitted to us. There's been other
7 work which is third party, but also reported in November of last, which was published.
8 But I think the question for the group is, "What do those reports on profitability
9 measures tell us about rate of return? Do they form a role in it? That's the question
10 that we have been asked to address ourselves to in this financial performance session.
11 So I don't know if anyone would like to talk to that?

12

13 ASSOC PROF PARTINGTON: So we're on the historical profitability now, is that
14 right - is that what we've got to?

15

16 DR MIRRLEES-BLACK: Yes.

17

18 ASSOC PROF PARTINGTON: Well, profit and cash flow of course can be very
19 different, and I endorse David's view, and I would expect the AER was already looking
20 at cash flows. You know, I mean, what's the - what's the free cash flow from the RAB?
21 Can you disaggregate it to that level, or can you only get free cash flow from the firm?
22 I'm thinking regulated businesses ; and I'm thinking probably the way they do their
23 accounting - you can get the free cash flow. While we're on accounting measures I'm
24 going to cheat a little and make a comment about gearing, because it hasn't been
25 mentioned. But as from 1 January next year, gearing, based on book values, will go
26 up. It will go up because there is a new accounting standard on leasing, which is
27 effective from that date. And what that will mean is nearly all leases previously - all
28 those leases that were operating leases, will be capitalised as debt. That will affect the
29 accounting for debt; it will affect the assets; it will affect the interest. So that's probably
30 something you should take on board and think about how that might feed into the
31 regulatory process. David Twedie -he used to be the chair of the International
32 Accounting Standards Board - Sir David - who's a very funny man - he has a great
33 line - he says, "Before I die one of my great ambitions is to fly in an airline that is
34 actually in an aircraft that is actually on the airline's balance sheet." And as from next
35 year his ambition will be realised. I'm sorry I diverged off on that track, but I actually
36 think it could turn out to be rather important.

37

38 ASSOC PROF PARTINGTON 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 cost of
40 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 get
42 right. But the idea is close to measuring economic rents - what it's effectively doing is
43 measuring the surplus cash flows that give rise to a positive or negative NPV. Or you
44 might want to look at residual income, and valuation models. They are also based on

1 accounting data, and relate discount rates; accounting profits, and value. Now, will
2 that be easy? No. But in the process you will probably discover some useful facts.

3

4 PROF JOHNSTONE: All those models claim you have got to plug-in a required return
5 on capital?

6 ASSOC PROF PARTINGTON: Or you can back it out. If you've got the value, and
7 you've got the profit numbers, you can back it out - that's what implied cost of the
8 capital is.

9

10 PROF JOHNSTONE: Yes. You got the value of the regulated business
11 though - you've got the value of the whole entity. So, you know, in some cases--

12

13 ASSOC PROF PARTINGTON: Yes, you can only do that with the total value.

14

15 PROF JOHNSTONE: Yes, I mean again, I think all these things just come to the
16 same - and that is that, you know, that the power and precision of these finance tools is
17 not as good as it looks in the books. That's what it comes down to.

18 MR SADEH: This is a different measure from my perspective, and there are naturally
19 clouding issues around the data - we're attempting to work through that. Assume for a
20 second that you could get perfectly comparable financeability, and profitability data.
21 The question is, "Should you be using it at the rate of return?" I think it would be - I'd
22 find it bewildering. Because to me the whole premise again - this is why I referred to
23 the benchmark efficient entity concept all the time. We talked about the separation of
24 systematic risk being in the rate of return, and the systematic risk being in the cash
25 flows. If you then look back ex post you're effectively cannibalising on the separate
26 risks that were taken by the network in the Opex allowances, and then making them
27 give them back after they've taken the risk through the rate of the return. To me that's
28 circular.

29

30 MR HOUSTON: Yes, I sort of echo that. I think it's totally fine for regulators to want to
31 record the ex post cash flows, and the earnings that businesses have achieved, at
32 least the ones to the extent are being regulated - part of them. But I'm struggling to
33 see any role that the - however complicated or after whatever working through of
34 that - any measure you may derive as to the ex post returns that were earned. I'm
35 really struggling to see how that is in any way informative of the question before, which
36 is--

37

38 PROF JOHNSTONE: Surely--

39

1 MR HOUSTON: Just a minute David. Which is the question before - which is, "What
2 is the rate of return that investors require?" Forward looking to provide capital to these
3 businesses, which we, I think agreed, earlier was a market-based variable - both as to
4 equity and to debt - with all their measurement, sort of, challenges. And the one thing
5 that ex post profitability, or cash flow analysis, is not, is a market variable. It's a
6 consequence of the difference between what you thought was going to happen, and
7 what did happen. So if you went through that process and you found that the rate of
8 return properly calculated - assuming no regard to the financing structure
9 identity, because that shouldn't be a part of this process - if you found that the rate of
10 return was X and X was bigger, or smaller, or had some - whatever relation it was to
11 the rate of return that you have set for the relevant period when you went back
12 historically and did that - what you would be measuring is, presumably,
13 out-performance, of the regulatory benchmarks. So that tells you something about
14 your regulatory benchmarks, and it tells you something about the out-workings of the
15 incentive systems as to capital; as to operating costs; as to service target
16 performance - all of those wonderful things we have now to encourage businesses to
17 do what we want them to do. But I think it would still tell you nothing about whether the
18 rate of return that you set five years ago when - or previously set for the five year
19 looking forward period, was the right one, or the wrong one. It cannot intrinsically
20 provide you with insight into that information.

21

22 ASSOC PROF PARTINGTON: You said something that was music to my ears there,
23 which was "forward looking", right? But then at the same time you're going to arguing
24 for a backwards looking cost of debt, right? So that itself is internally consistent. With
25 regard to, you know - did we get more or less than the required return? Well, you
26 know, there may be all sorts of reasons for that - it may agree - it doesn't necessarily
27 mean that the previous return was too high, or too low, but it might help inform
28 judgments about whether or not the point that Martin makes, that you adopted perhaps
29 generous parameters in your costs of capital estimation process whether in fact they
30 do need to be quite so generous? And if, for example, one were to find that the
31 regulated utilities were consistently earning rates of return above the benchmark, then
32 Martin's idea - well, you need to set a high benchmark so that they are incentivised to
33 invest enough - well, that wouldn't seem to be such a strong case, would it? Because
34 the fact they are generating these high returns would suggest that it's actually in their
35 interests?

36

37 MR HOUSTON: Could I - I just want to pick apart that Graham, because if - we're in
38 2018 - let's just say, a hypothetical business with the impact? In 2012 we made a
39 decision on that business's revenue, and we'd - let's just say we thought the cost of
40 capital, without a rate of return at that time, were estimated to be 10% back then? We
41 set their revenues for five years on that 10% along with a set of cash flows forecast in
42 the PTRM. We then go back now and we look at the five years that prevailed for and
43 we find out that they earned 12% say, I struggle to find any way I could use the
44 existence of that 12% to tell me whether the 10% that I set at that time was a good
45 number or a bad number or even if they earned 8% I still wouldn't know whether my
46 10% decision was a good decision and that's my difficulty--

47

1
2
3 MR HOUSTON: We know that they earned something different to what we expected
4 but that's intrinsic to the capital markets. So I'm struggling to just see how your
5 actually gaining any information about what the cost of capital was at the time that you
6 set that figure.

7 PROF JOHNSTONE: Well you're not gaining necessarily any information about what
8 the extant cost to capital was back then but you're certainly gaining a lot of information
9 about the financial performances being achieved by these organisations which is
10 obviously a relevant consideration to the regulator in determining whether settings
11 have been too generous or not. I mean where else would you look other than the past
12 cash performance if you wanted an indication of what settings were like?

13

14 MR HOUSTON: Well like I agree with that but for one qualification, the settings you
15 would be evaluating are not the costs of capital settings but the other settings that it
16 was applied to before you take into account the prospect of outperformance; because
17 we're talking here about how to estimate the rate of return and if someone earns more
18 than the rate of return we have no way of knowing whether that was because - all we
19 know is that they earned more than the rate of return. We still don't know whether the
20 rate of return we set out applying was the right one. That's the question.

21

22 PROF JOHNSTONE: No you're pulling our leg. I mean it's obvious if someone's
23 earning particularly say far more than you would have expected the indications are that
24 the settings that generated that--

25 MR HOUSTON: But what settings?

26

27 PROF JOHNSTONE: The regulatory settings of the time--

28

29 MR HOUSTON: Is the rate of return setting wrong?

30

31 PROF JOHNSTONE: Well the whole regulatory framework, everything, the RAB, the
32 WACC, the whole thing. So that's what generated that financial performance, if there's
33 money dripping off the walls where's it coming from and why? It's an obvious thing to
34 do.

35

36 PROF GRAY: Just sort of pragmatically what would you do with this information if you
37 were minded to have a regard to it?

38

1 MS CIFUENTES: Just before we get to that because that's assuming something about
2 the veracity of the information, if I can just ask Greg, would it make any difference and I
3 take your point on an individual business basis, would it make any difference if we
4 were looking at trends across all the businesses? So for example all the businesses
5 were over or under performing in their actual relative to the allowed rate of return?

6

7 MR HOUSTON: I don't - as I understand it the relevant question we're here to discuss
8 today is how best to estimate the rate of return which was going to be one input into a
9 thing called regulatory settings. And a question is is that a good estimate of a market,
10 which I think we agree is a market base variable at the time it is made and I can't for
11 the life of me see how any ex-post analysis, no matter what it shows, will tell us
12 whether or not that was a good estimate at the time it was made. It might - it would - it
13 may tell us about other things in the regulatory framework and it's not a thing the task
14 of this session to engage across all those other things except I will indulge just for a
15 minute and that is to say--

16

17 MS CIFUENTES: Will you just perhaps just address that question of whether it does
18 make a difference if it's across the whole industry or not?

19

20 MR HOUSTON: Well I don't think it - I think I have addressed it saying I don't see how
21 it can make a difference or provide any or apparent - I'll see you say make a difference,
22 how it provides useful information to the question that is relevant for this which is is the
23 rate of return we're trying to derive a good estimate of the costs of capital for these
24 businesses? It may be it's quite normal actually in the regulatory sphere for
25 businesses to outperform and that's indeed why we have incentive programs and one
26 of the properties of a not red regulations you need to because we don't have - the
27 normal market basis - it seems to be efficient we set up incentive schemes and on
28 average we expect them to respond and earn above the costs of capital or above the
29 allowed return through those incentive schemes. So I don't see in general - and this is
30 quite consistent with the literature that businesses that are regulated earning on
31 average above the rate of return - that is something that should be troubling. There
32 may be questions about on average whether they should be earning how much above
33 but they are all questions of going to non-rate of return parameters of the regulatory
34 scheme. They're not questions that go to the rate of return and whether at the time
35 was it good assessment of the question that arose at that time.

36

37 PROF JOHNSTONE: It's a question of what it means for right now. You know if there
38 is money dripping off the walls that's a pretty interesting consideration when it comes to
39 current settings. Forget about whether the past settings were right or wrong, you can't
40 change that, but certainly the consequences are very revealing. I mean it verges on
41 ludicrous to suggest that you wouldn't look at past financial performance of regulated
42 entities to give you indication of how to regulate them in the future.

43

44 MR SADEH: I--

1

2 MS CIFUENTES: Sorry I did interrupt Stephen. Apologies.

3

4 PROF GRAY: I was just going to bring us back to pragmatically what more do you do
5 with that information if you were minded to have regard to it. So I don't think we can
6 use historical performance figures to help us estimate the risk free rate or beta or
7 correlation with market returns or market risk premium so that means that this
8 information would at best be kind of relegated to this nebulous bucket of cross-checks
9 and then so how does that work? We apply this cross-check after we've estimated risk
10 free rate, beta, and MRP. We've got then what we consider as a regulator to be our
11 best estimate of the required return, then we look at this historical data and apply a
12 cross-check and either it's a binary thing right so either we're going to look at the
13 historical data and say well we think it's a tick, we pass the cross-check and we won't
14 go back and revise any of these perimeter estimates or somehow we've got some
15 threshold and we decide that it's failed the cross-check and that's going to be some
16 sort of trigger for us to go back and revisit the parameters. So if it's the latter and we're
17 only going to write down parameter estimates that satisfy this cross-check why don't
18 we just start with the cross-check and just allow a return that we know is going to be
19 satisfied. Do you see what I'm saying?

20

21 MS CIFUENTES: Absolutely. And is that a - is that relevant to cross-checks generally
22 speaking?

23

24 PROF GRAY: More generally? Absolutely. But I think--

25

26 MS CIFUENTES: All right so we may come to that but I think that is quite an important
27 issue the role of cross-checks.

28

29 DR MIRRLEES-BLACK: One thing I'd like to raise and it reflects the stakeholder
30 submission on this where one of the stakeholders is suggesting that this information
31 should be used in the context of thinking about the required rate of return and its well if
32 you had this information on profitability you'd ask three questions as a result of it. The
33 first is are actual returns higher than allowed which Greg's already covered and it
34 doesn't necessarily mean that the rate of return is right or wrong but it just reflects
35 other factors. Secondly are actual returns higher than in comparable businesses which
36 leads to the question of what are comparable businesses and have you got
37 comparability in your measurement; and then thirdly are allowed returns higher than
38 investor expectations were. So whether asking those three questions helps the
39 deliberations it may do. But those are three ways in which you could use that
40 information now it may be that it falls into the cross-checks heading to use this in that
41 way but it was a frame work for thinking about how you might use this information.

42

1 MR SADEH: I still can't get past the fundamental principle about comparing like with
2 like and then 2. If you could then are you using a representative dataset? Now you
3 know whether it's a fluke or not I really don't think it is, but the listed networks tend to
4 also be most of the top performing entities within the broad benchmark. You're holding
5 everybody to a hypothetical average which was actually calculated off the top
6 performers and good for them for doing a good job. That's why they're getting
7 outperformance on the Opex which back to the principle is why they're generating a
8 return which would be you know cannibalising to put off set of that into the rate of
9 return.

10

11 ASSOC PROF PARTINGTON: Just on that particular point there is a literature on
12 computing the internal rate of return from accounting data in other words you do it
13 entirely from the accounting data. I haven't done it so I don't know how good it is but
14 there are some top researchers, people like Kea Peasnell, for example, who have
15 worked on it.

16

17 PROF JOHNSTONE: You just told us about accounting data minute ago though in a
18 different way. Subject accounting standards right and changes, garbage in garbage
19 out.

20

21 DR MIRRLEES-BLACK: Are there any more points that people want to raise on
22 profitability or questions? In which case I mean I think a range of views I think David is
23 saying that there is a role for this data and it should be collected and used in
24 deliberations. There are other views that it should be collected, not quite sure how it
25 should be used but it may be used elsewhere in the regulatory process, and there are
26 also views that it provides no information on the rate of return guideline and it's other
27 factors which are determining the returns so I think that's--

28

29 MS CIFUENTES: Jonathan, just going back and I'd like the use, Stephen's use of the
30 word the vibe, you know you've got to look at the data, there's the data and then
31 there's the vibe. Is this the sort of information that fits into the vibe category because
32 we've got all sorts of problems about limitations of data, some of the measures are
33 completely meaningless, you might end up doing this internal cannibalisation and I
34 take the point about the cross-checks you know I agree with that. But is this one of
35 those bits of information that maybe informs not so much the rate of return but the
36 process of putting the submissions together? The proposals together? So that which
37 takes it out of in a sense the consideration of rate of returns which as Greg's pointed
38 just doesn't sit here, but is this one of those sort of categories of information that side in
39 the vibe that the businesses, consumer groups, talk about in putting their proposals
40 together?

41

42 PROF JOHNSTONE: This data is as hard as probably most of the data you deal with
43 because it's things like cash surpluses, it's how much cash is invested, these are
44 observable things. To not observe them would be very remiss. I mean interpreting

1 them is not going to be necessarily straightforward but this of all the data that would
2 feel into this process observed cash surpluses and amounts invested, probably quite a
3 few other black and white things, are unarguable. They're auditable.

4

5 PROF GRAY: I think that - I don't know whether this is what you're suggesting but if it
6 is I think it's an excellent idea, but--

7

8 MS CIFUENTES: Well then clearly that's not a suggestion.

9

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

20

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

22

23 PROF GRAY: And I agree I think--

24

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

30

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

32

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

38

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

4

5 PROF JOHNSTONE: That's not the point. It's about the setting now and what it tells
6 us about the setting now.

7 MR COX: I mean, the reality is that this is the sort of things that people do care about.
8 I mean, it's going to be part of the debate anyway, and it may not be a clear link to the
9 rate of return, but it's not irrelevant.

10

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

15

16 PROF GRAY: Particularly if that's applied retrospectively. We set our best allowance
17 last time around. We look back over five years, see you did pretty well and say you're
18 going to set an allowance below what we think is the best estimate this time. So trying
19 to balance things out. I think that's the real danger.

20 PROF JOHNSTONE: There's the danger the other way though, too, isn't it, that we
21 might adjust it upwards as well. So it's always coming down to the judgment in the
22 end, and this information feeds very much into that judgment. I mean, what business
23 doesn't look at its past performance when it's making its current decisions. I mean,
24 what regulator would not look at regulatory outcomes when making current regulation?

25

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

28

29 **SHORT ADJOURNMENT**

30

31 Thanks very much everybody.

32

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

35

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

1

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

11

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

19

20 And if it's the case that the RAB multiple will override our first stage efforts to get the
21 best estimate, then why do we bother with that first stage? Why don't we just set a
22 return based on the RAB multiple. And if we're not going to change our best estimates
23 based on the RAB multiple, then why do we look at that. I think that's the issue that we
24 have to come to grips with. I might stop there, there's a lot of other issues, but
25 probably they'll arise during the discussion.

26

27 PROF JOHNSTONE: The list is a good list, and it's interesting to look at all those
28 things, but it is a one sided list, because it doesn't talk about the most obvious
29 candidate for why the RAB multiple might be too high, and that is that the tariff stream
30 is generous. So in other words, that the cash flows flowing to the investor actually
31 exceed what they would require relative to the exception of risk. To drop that one off
32 makes them not realistic, in a sense.

33

34 Then also, it's probably likely if we put a list together of why the market RAB multiple
35 could potentially be less that one. So, there's only half the story there in that list.

36

37 PROF GRAY: In Daryl's defence, he was providing a list of reasons over and above.

38

39 PROF JOHNSTONE: Yes, that's what I'm saying, it's a one sided list.

40

1 MR HOUSTON: I think it's a complete list, but does it include the point you're talking
2 about
3
4 PROF JOHNSTONE: Included?
5
6 MR HOUSTON: Included the point you were talking about.
7
8 PROF JOHNSTONE: I didn't hear that point, the point that the revenue stream's too
9 generous. Was that mentioned?
10
11 PROF GRAY: Yes. Just for clarity. So Daryl's paper was from the perspective that it's
12 often proposed that if you see a RAB multiple above one, it must be because the
13 regulatory allowance is too generous. And his point was there are these many other
14 reasons why--
15
16 PROF JOHNSTONE: So he's conceding that is a potential reason, so therefore it
17 could be on the list.
18
19 PROF GRAY: Absolutely.
20
21 PROF JOHNSTONE: That's the point I'm making.
22
23 PROF GRAY: But how much is attributable to each, that's the main point that he
24 makes.
25
26 So, Greg, Ilan, Graham? Would you like to make a comment on RAB multiples?
27
28 ASSOC PROF PARTINGTON: Basically to reiterate what's been said, that there are
29 three reasons. One is that the investors have a lower of discount rate, the rate they've
30 been given. Or, they expect cash flows greater than those allowed by regulation, for
31 some other reason, it could be tax, it could be efficiency, it could be a whole list of
32 things. Some of which are mentioned in the paper, and all sorts of other possibilities
33 as well. It's based on an expectation that somewhere, extra cash flows are going to
34 arise, over and above the regulated cash flow. That's a possibility.
35

1 The other possibility is real options. And that's the really difficult bit to nail down,
2 because there are options to grow, options to contract, options to switch technology,
3 options to wait, options to accelerate investments . How much is that worth? Well, it's
4 worth something, definitely not captured in a standard DCF analysis.

5

6 PROF JOHNSTONE: Consistent with all those things is the potential, it's like an
7 auction. The foresight that we may gain the regulator. That's an obvious
8 consideration.

9

10 ASSOC PROF PARTINGTON: That's certainly part of the option mix.

11

12 DR MIRRLEES-BLACK: Ilan?

13

14 MR SADEH: Multiples clearly have been going up, and it's fair for anyone to ask why
15 would that be the case? Why is that something that is part logical, partly a function of
16 our markets in terms of demand for assets, more aggressive. Start looking at the
17 fundamentals of the network. So if everything else stays constant, what else is
18 changing that will impact the multiple? Obviously the focus has been shifting in recent
19 years to the incentive mechanics, and the entities that we have, their ability to
20 outperform. That outperformance, in a relative sense, becomes higher when you're
21 moving from a high investment cycle to a low investment cycle for a while.

22

23 So in my mind, if nothing else changed, you would expect your RAB multiples to
24 eventually cycle a bit, following that outlook for Capex. As people have said,
25 unregulated value, that is quite material, and that is different between businesses,
26 notably look at the differences in purported multiples of Ausgrid versus multiples on
27 transmission and Endeavour. Distribution businesses have other things that are - I
28 heard a great term, MAB and PLAB, that are not part of the RAB. But public lighting
29 and metering that are not part of the RAB, but nevertheless are things that require to
30 be operated and generate revenue. There are customer connections as well that don't
31 appear in the RAB of a distribution network.

32 So I'm not trying to bamboozle people by saying there are a whole lot of reasons, and it
33 must be, nothing's changed. But there are definitely reasons that RAB multiples will
34 change over time as well.

35

36 MR HOUSTON: I was just going to raise the point that given the long term structural
37 decline in interest rates, that we've observed in the odd brief, but two more decades,
38 perhaps three. And given, putting aside the recent introduction of a trailing average.
39 But given a regulatory scheme where every five years the revenues are reset, based
40 on, at least till recently, prevailing risk free rates, and what goes on top of that. You
41 would expect, even if that process involved expectations of cash flows that were

1 perfectly realised. And so perhaps in all of those conditions, you get a RAB multiple of
2 one.
3
4 But in that world of structurally declining interest rates, where any regulatory
5 determination is going to be a bit out of date, and if reset on that particular day would
6 be lower, given the way that rates have gone. You would expect a buyer coming
7 along, and taking complete control of the business, in one transaction. You'd expect
8 them to pay more than that, because they are bringing new capital on that day, which
9 is at a cheaper price that will have been at the time before, when the regulatory
10 determination was made.
11
12 So that's a phenomenon that we see, of a declining cost of capital in nominal terms,
13 due to the macro economics.
14
15 PROF GRAY: That's the mark to market of the debt.
16
17 MR HOUSTON: Exactly.
18
19 PROF GRAY: So like a simple numerical example. Suppose you had $100 of debt,
20 perpetual debt. To keep it simple. You had $100 of debt that you issued at 8%, when
21 that was a fair market price. So you're paying coupons of $8 a year. Then sometime
22 later, market interest rates have fallen to 4%, and the business is taken over. The
23 present value of the debt, how much you'd have to pay to release yourself from that
24 debt, has gone from $100 up to $200.
25
26 MR HOUSTON: Exactly.
27
28 PROF GRAY: The mark to market value. So the new bidder would have to come in
29 and pay $200 to release that debt. And that would appear as a RAB multiple. But all
30 they've done is taken over the original guy's $8 coupon.
31
32 MR HOUSTON: Correct. So that's exactly the phenomenon I'm referring to. So, in
33 some sense, if you take the New South Wales transactions, we know they were
34 financed by not perpetual debt, by a long termdebt, always at higher rates by definition
35 than the current prevailing rate. What you're witnessing is a transfer of loss of a debt
36 or a mark-to-market loss on a very large debt portfolio. So part of the RAB multiple is
37 compensating the taxpayers of New South Wales for the mark-to-market loss they've
38 suffered.

1

2 I haven't quantified it but--

3

4 MS CIFUENTES: Does it work both ways?

5 MR HOUSTON: Yes. So what now, going forward, if one was to believe that we could
6 be at the bottom of the global interest rate cycle, and we have risk free rates going
7 from sort of high twos to four or five, over the coming few years; and then you start
8 engaging, and think, what would be the RAB multiples, in that environment. Where
9 there was no regulatory outperformance of the other things, you would expect them to
10 be falling below one, exactly the 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 don't think
13 it's mentioned in Daryl's paper, but it is a quirk of the whole business refinancing
14 patterns, in one snapshot at the time of these major transactions, and it's quite an
15 important effect.

16

17 MR SADEH: We were talking about privatisations. I think, in my experience, that
18 could be a handful of basis points on a RAB multiple. It won't be one decimal place, it
19 may be three to five basis pointsr, and it will depend on how far from the last
20 determination was the acquisition. Yes, the last couple of years invariably with rates
21 going down, a new buyer has effectively been subsidised a little bit for the remaining
22 part of the first regulatory period by the outgoing seller, that will change as rates move
23 or settle in the next few years.

24

25 DR MIRRLEES-BLACK: Can we just break down the question into two, which I think
26 we can, which is, first of all, does data on EV to RAB multiples provide information
27 about the allowed return compared to the cost of capital and then the second part of
28 that, if the answer to that question is yes, then you can say, well, if so, what do you do
29 with that information and does that actually influence the way that the AER should be
30 doing anything? So, on the first point, I think you've said that there are some
31 calculations that can be done, but do you think that EV to RAB multiples can tell you
32 information about what the allowed return is compared to the cost of capital?

33

34 PROF GRAY: I think, like, a good setting to consider that is the TransGrid sale. So,
35 TransGrid changed hands at a time when the allowed return on equity was 7.1% and
36 there was a multiple, depending on how you compute it, maybe 1.6, so the question is,
37 what does that 1.6 tell you about the 7.1% return - allowed return on equity at the time?
38 That 7.1% was going to apply for four out of 99 years, so it's not clear that that first four
39 years is going to be a material part of present value that the bidder has computed.
40 Most of the value is going to relate to what the bidder thinks allowed returns might be
41 in the remaining 95 years, so I'm not sure, it's a huge extrapolation to say, because I

1 observed that multiple I know that the allowed return for the first four of 99 years must
2 be too high.

3

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

25

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

33

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

39

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

45

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.

ASSOC PROF PARTINGTON: Just going back to a point that Steve made, I mean, it is true, that backing out the discount rate from the market value and the RAB itself is the same problem as the dividend growth, which is, you've got to make a terminal value assumption and there is uncertainty about that. However, going back to Steve's earlier comment about sensitivity analysis, one could have various terminal value assumptions, such as, you know, the terminal value is the right one, there's some growth rate or some rate of decay by which time you come to equality between the RAB and value. There's all sorts of possibilities, but you could do a sensitivity analysis.

DE MIRRLEES-BLACK: I think that comes back to my question, which is, can you infer anything about expectations about allowed returns compared to the cost of capital from RAB multiples? Stephen has outlined and then followed Daryl Biggars' paper that there's a set of calculations that you can do that leads you there and you can get to an answer and there may be some assumptions we have. Does it provide any information?

ASSOC PROF PARTINGTON: Well, just like the early discussion, right, it's history. Then the question is, how does history inform the present? If history says, well, it does look as though the rate was too high or too low, the regulator might then say, well, what mistakes did we make, can we learn from that - I'm not suggesting they automatically make an adjustment. What I'm suggesting is, what was it in our prior processes that led to an error in our rate setting and can we fix that?

PROF GRAY: There's a bit of a risk to the regulator as well, in that we don't have many - we don't see many of these transactions occur. They occur quite infrequently and so it has to be a timely transaction to be relevant and each transaction is somewhat unique. One possibility is, just to take an example, suppose there was a quite inefficiently managed network that was sold and the new owner attributed significant value to improving management, improving operating costs and so on. There is a lot of out-performance to be expected and therefore, they paid a relatively high multiple because they thought the improvement relative to the status quo that could be achieved is really quite material. There's an issue if we then take that RAB multiple and then somehow use that to effect a return that we're going to allow across the whole industry.

MR SADEH: You only need to look at the prevailing proportional RAB multiple within Spark as an acquirer of TransGrid at the time. The acquisition multiple was different to their trading multiple reflecting the differences in the business. There was a big difference there and a lot of that reflected TransGrid as a transmission asset having unregulated opportunities different to the bulk of the existing Spark portfolio, being a distribution network, so it was a different thing.

1

2 ASSOC PROF PARTINGTON: I completely agree that you can't just assume you've
3 got the right range. You need to try and analyse what the sources of differences in
4 value are due to. Now, it seems to me, from what I'm hearing, you've got some pretty
5 good insights into that. Given that you're going to be in second session and there is
6 now an investor consultative panel, maybe they might be a useful source of information
7 in relation to why these multiples are what they are.

8

9 MR HOUSTON: I think let's just sort of examine that proposition that we've got good
10 insight. I think it's reasonably clear that if we take some of the other approaches we've
11 been talking about to parameters, debt risk premium, market risk premium, so on,
12 essentially in those we're looking at market value and of course, there are discussions
13 and disputes about the best way to look at market value, but currently we have a data
14 set that's objective and we make judgments or we apply methodologies and we have to
15 make judgments about to that data. But when we're talking about a particular
16 transaction multiple, first of all, we're engaged in a sort of pretty complex dissection of
17 an individual transaction and that seems to me to be a wholly different proposition for a
18 regulatory process or regulator to engage in compared to the former and it's inevitable
19 that the attempt to dissect that transaction and the different sources of value will
20 involve a huge amount of subjectivity. Indeed, it will involve information that won't
21 readily be available to that regulator and you'll have to think about what process he
22 might go through to obtain that. And I think the question is, if you did go down that
23 road, would you end up with - in a position where you would be better able to form the
24 judgment that you were otherwise making with market data and to leave in a better
25 position, you'd have to be confident that the subjectivity on the transaction-specific
26 dissection process was less than whatever judgments you need to make in analysing
27 and organising market data. I'm not convinced that you would be in a position where
28 you would have reduced the subjectivity, in fact, I think you may have added a lot of
29 subjectivity and still left yourself quite uncertain about what to do with whatever answer
30 you come up with.And you're also taking on quite a challenging process in terms of
31 what you need to - the information you need to get and how you need to think about it.

32

33 DR MIRRLEES-BLACK: I think there's one point that is worth raising here in that the
34 discussion that you've had has been referencing transaction data, but of course, you
35 can also get RAB multiple data from listed entities.

36

37 MR HOUSTON: Just on - I agree, that's another source of - and it's clearly set out in
38 the paper. I think that the first thing I want to do with it - this is not an idea that has
39 only just emerged out of the woodwork in Australia - is a long history of US regulated
40 utilities where indeed, they use - there's such a deep market there that they use
41 analysts' forecasts of dividend growth as a critical input to their calculations of the
42 estimations of the cost of equity. And so we have a deep market in the US of listed
43 utilities, all of whom generally in history have traded at a positive multiple of their
44 equivalent of the RAB. Now, then we're not the first people to ask the question, why
45 would that be and have sought to explain that. One question I think would be straight
46 away for careful examination is, do the kind of trading multiples that we see in the very

1 limited number of listed utilities that we have here, are they a lot different, or quite
2 similar to the rich deep set of observations of essentially the same thing in the US?
3 Obviously, they have a different system of regulation. We need to take that into
4 account as well, but if you want to look at trading multiples, then you really need to
5 understand what you see here in the context of what you see elsewhere and we've got
6 the UK as well and I guess the question would be, is there any reason to think why we
7 in Australia are an outlier on that question? It's not - I haven't done the work - but it's
8 not obvious to me that we are, but perhaps that's a question that you could consider.
9 Even if we were an outlier, the question would arise, well, is that because our rate of
10 return is wrong or because of some other part of our regulatory scheme needs
11 examining? But I think it is important to understand that we're not alone. This is a
12 variable that is around the world and just to understand where we sit would be a very
13 important first question on the trading multiple question.

14

15 PROF JOHNSTONE: I know we can construct good theoretical arguments for why the
16 RAB multiple might be greater than one, and I can probably add to them things like the
17 behavioural finance and viewpoint of overconfidence and myopia and things like this,
18 but on the other hand, just suppose these RAB multiples we are observing were .7 and
19 .6, what would be the reaction then? Wouldn't the automatic reaction then be that the
20 regulator is not rewarding the entities enough to attract people to buy? So we are
21 having our cake and eat it too. When it's too high, we want to ignore it but if it was too
22 low, I can guarantee we would not be ignoring it.

23

24 PROF GRAY: I don't think that for theoretical reasons, I think we got evidence on this
25 as well and there's a giant bid model that is produced, that forecasts the cash flows
26 that you get from all these different things, discounts them back to a present value and
27 that's the number that is given.

28

29 MR SADEH: It would be great if you looked at buying simply on a multiple because I
30 could go to sleep for six months and not flog myself on a bid. It's the last thing we look
31 at. It is a simple cross check but I agree with what Greg said, that it would be - is there
32 information? Sure, there is some information. It would be crazy to say there is nothing
33 that you could ever gain from it but it's the relative insight that it gives you compared to
34 the risk of how you can use it in a subjective way that would concern me. I mean, do
35 we look at international rate multiples when we look at Australia? Well of course we
36 do, you know, what do you see in the UK for example? Until recently most of the
37 multiples are in the water sector now. Why does the water sector have a lower
38 multiple than Australian network utilities? There's zero unregulated revenue which is
39 not part of the feature of the landscape. So we always do look through them but
40 there's so much dirt in comparing them as simplistic measures that it's dangerous to
41 say that you could then use them for an explanation.

42

43 MR HOUSTON: And I think to your point David that Daryl Biggers' paper points out a
44 number of good theoretical reasons why they will on average be higher than one,
45 which is the fact that these figures are not - none of them conform, but they are pretty

1 tight conditions and you need them to be one so on average we should expect them to
2 be greater than one. There is plenty of literature out there that supports that.

3 So it's not the observation that multiples greater than one is the problem. The question
4 is, is there some multiple at some level that we can say is a problem in terms of
5 suggesting we accept the rate of return too high? And that what Daryl is saying is - I
6 think we are all saying - it is an extremely difficult question to answer and if you set
7 about the process of trying to answer, when you get to the end will you be any better
8 off?

9

10 PROF JOHNSTONE: Yes, I definitely accept that there is potential growth and things
11 like this, growth options and so on that can make the multiple greater than one. But in
12 the end, feeding into the valuation of what we were talking about Ilan is this cash flow
13 stream and that's the regulating cash flow stream. The question is how big a
14 component of the valuation you put on the NPV in the end is that and its reliability?
15 Now I think that is what I would have thought would have been a focal point in a
16 valuation of one of these entities that an outside market participant would have. They
17 want to know how much money is it going to be and how reliable is it and how long is it
18 going to last and how can we gain control over it and maintain it and all those sorts of
19 things. I am sure you do that. So that focuses back then well is that cash flow stream
20 therefore potentially too generous. And that question won't go away because it is a
21 plausible explanation for a rate greater than - multiple greater than one.

22

23 PROF GRAY: I think here's the question that you really - you would never get this
24 answer because it is obviously super commercial in confidence, but here's the question
25 that you would like to be able to unravel which is, so you have got a bidder who
26 produces a bid model and the question is would you have been prepared to pay up to
27 a price, a price such that if you applied the implied internal rate of return of that
28 assumed equity, was equal to the allowed return? And so the answer to that is always
29 no. So the only way that you can get an appropriate return to equity is you get some of
30 it from the allowed return but then there are extra bits that come from out performance

31

32 MR SADEH: And incentives from--

33

34 PROF GRAY: And incentives et cetera et cetera. That's the only way you could get up
35 to--

36

37 MR SADEH: And it's an NPV of all the future superior incentives, it's not just the next--

38

39 PROF JOHNSTONE: Yes sure but it still doesn't answer the question of how big a
40 component in that rate multiple of 1.6 is the fact that this is a regulated income stream?
41 That's the--

1

2 MR SADEH: Sure--

3

4 PROF JOHNSTONE: That's the question--

5

6 MR SADEH: --let me not answer that given its commercial in confidence--

7

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

10

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

20

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

22

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

36

37 So the question, what the regulator would do is look at credit metrics, credit rating
38 agencies do and then be concerned with its -the notional company was to look too
39 comfortable under credit ratings or credit references or whether it looked like it was
40 stressed. So then the question is let's suppose a regulator were to do that, does that

1 have any role in the regulatory process or does it have any role in particular in the
2 setting of the rate of return, and I think rather than me give any view, I suggest that's
3 for the panel here. Does this type of financeability analysis in assessing whether a
4 settlement allows a company to - how it sits in terms of ratings? Does that play a role
5 in setting rate of return?

6

7 ASSOC PROF PARTINGTON: Can I ask a question? My question is how does that
8 relate to the zero NPV criterion?

9

10 MR HOUSTON: Could I try and answer this?

11 DR MIRRLEES-BLACK: Yes.

12

13 MR HOUSTON: I think the - as I would describe it financial ratios - amount to an
14 evaluation for time profile of cash flows, whereas a zero NPV held or whatever you
15 want to call it, is the NPV principle is - ignores the time profile of cash flows in the
16 sense that it is the NPV of the cash flows that whatever, you know, given the timing in
17 which they occur. Whereas the financial ratio question will be affected by when those
18 cash flows occur, obviously all discounted appropriately.

19

20 So they go to really whether the set of cash flows you are talking about will achieve an
21 investment rate of credit rating because the timing of those cash flows affects their
22 ability to withstand their credit rating. So you could have a set of cash flows that were
23 zero, zero, zero for a 100 years and then some fantastic amount and that would be - it
24 is what it is.But they would not be able to achieve an investment great credit rating to
25 invest in those cash flows. I think that's the sort of fundamental distinction between the
26 two.

27

28 ASSOC PROF PARTINGTON: I don't disagree with that, but the question is then how
29 does it link back to the objectives that we are trying to achieve?

30

31 MR HOUSTON: Well it's got very much all to do with the question of what is the
32 appropriate - what is the market rate of return. It may be relevant for testing whether a
33 regulatory determination which applies that market rate of return to a set of cash flows
34 over the coming five years is capable of achieving a lesser credit rating. One
35 circumstance that may not be capable of achieving that credit rating would be if there
36 was hypothetically a very, very large capital expenditure program that was large as a
37 proportion of the RAB as it was at that time. In that circumstance, questions arise as to
38 how you might adjust the time profile that cash flows to achieve the necessary credit
39 rating which can be done on an NPV zero basis by altering timing of depreciation.
40 Beyond that I don't think it has much to say about the appropriate return on capital.

41

1 PROF GRAY: You can think about it as a test of the internal consistency of the
2 regulatory determination, so the allowed return is based in part on assumed credit
3 rating, and then you can observe whether the allowed returns produce financial metrics
4 that would support--

5

6 MR HOUSTON: Yes.

7

8 PROF GRAY: --the credit rating that it assumes. And if there is a dislocation there
9 and there is an internal consistency it would reveal it.

10

11 DR MIRRLEES-BLACK: David, do you have any thoughts on financeability?

12

13 PROF JOHNSTONE: I just got the impression that the credit ratings agencies are
14 recent - their behaviour as reflected by the fact that so many of these regulator assets
15 have been re-privatised in the world or bought out. It suggests to me that the general
16 perspective from the outside world is that these are safe cash streams at least relative
17 to what is happening in the broader economy. That's my overriding impression and I
18 think I would expect the ratings agencies actually see them. That way they allow - I
19 think they have in mind that these entities could buy very large sums relative to RAB,
20 large proportions and that means to me that the ratings agencies suggest that those
21 RAB based income streams are very safe.

22

23 MR SADEH: I don't - certainly it works that they are supposed to be relatively safe.
24 That's their class fit. The agencies typically look at two or three metrics, debt to RAB,
25 BEEs we talked about before. Is there other issues with gearing? It is really more
26 particularly on low interest loans around interest cover metrics, and the fact is that cash
27 flow fluctuates and comes from more than a return on your WACC. It is all available
28 equity to service debt. So you always need to look at the relationship at any point in
29 time between debt to rate and further debt as that other measure. At the moment
30 given the cycle, the key rating constraint tends to be effort voted in and not get to the--

31

32 DR MIRRLEES-BLACK: Can I just--

33

34 ASSOC PROF PARTINGTON: And presumably the rating depends on all these other
35 factors we have just been talking about which generate cash flow and value and turns
36 the cash flow around.

37

38 MR SADEH: Yes well that's where--

1

2 ASSOC PROF PARTINGTON: I'm agreeing with it.

3

4 MR SADEH: Yes and I agree with Greg's point as well that it seems to me to be more
5 of a yield profile issue but fundamentally if you are looking at an unlevered cash flow or
6 a - there can be a total levered but total corporate cash flow, then why are you putting
7 on a separate lens of just looking at the debt serviceability of it. It it's a faux profile for
8 these kinds of assets, you tend to look through another lobe. Unless you have got
9 such a large issue with an intra period of Capex funding, how do you aim for the cost
10 service funding service until the assets are realised? That's the only way I see it.

11

12 DR MIRRLEES-BLACK: So just to summarise and to give an example, let's suppose
13 that you have it - AER does a financeability analysis of a projected price determination.
14 It discovers that - the cost of allowed rate of return determined under the guideline. A
15 notionally financed company breaches ratios maybe quickly during the course of that
16 price control review. You would argue - you would suggest that that was probably due
17 to phasing of cash flows so you won't want to change the depreciation schedule or
18 alternatively you might need to raise equity because this has got a large Capex. You
19 couldn't infer any information from that about the rate of return that would help the AER
20 in setting the rate of return? Is that a fairsummary?

21

22 MR HOUSTON: I think so, or to put it another way is that the cash flow - the set of
23 cash flows to which you're applying your rate of return, which presupposes a particular
24 credit rating - those cash flows are not capable of supporting that credit rating. So
25 there's an internal inconsistency. You either have to alter the cash flows to make them
26 capable of supporting the credit rating or, if you're not prepared to do that, then you
27 have to revisit the credit rating and all of the consequences that has all the rate of
28 return parameters. I think it's probably more attractive to revisit the profile of the cash
29 flows, make them less risky by bringing them forward and then you can stick with the
30 rate of return and the credit rating benchmark that you started out from. But they all
31 must be consistent.

32

33 PROF GRAY: If it turns out that there is this inconsistency between what was the
34 assumed credit rating and what the allowed returns would support during that
35 regulatory period I think there's another piece of work which is to try to uncover why is
36 that the case. So like there are at least two possible explanations. One is there's a
37 temporary effect here and it may be because of some capital expenditure or other
38 reasons so that could be easily solved in an NPV neutral way just by advancing some
39 cash flows. The alternative is that there's a persistent effect if you model forward - but
40 there's a persistent degeneration in the credit metrics and there's a sort of long term
41 structural failure to reach the assumed credit rating and that would lead you to revisit
42 the assumptions that we're making.

43

1 DR MIRRLEES-BLACK: Okay.

2

3 MR COX : Just pointing that no matter how a substantive a question is though, is this?
4 By which I mean whenever I read rating reports utilities tend to have a stable rating.
5 How often do any of them get caught on a negative credit watch?

6

7 MR HOUSTON: Well it's - I think that's separate. But that's an empirical question and
8 we can go to the sort of data on that--

9

10 PROF GRAY: But it goes to how much effort we should put in to investigate this
11 question.

12

13 MR HOUSTON: Correct. And I think but there are regulatory circumstances, often in
14 the water sector where there are very long-lived assets being invested in, where given
15 the regulatory model and the cash flows that are derived from that. In essence we
16 have the cost of debt and the cost of equity are not too far apart and where you have
17 indexed the assets according to inflation, so the assets are going up by 2.5%. So
18 2.5% of your return after paying for debt is going to inflate the value of the asset and
19 the depreciation will only be one eightieth which is much less than 2.5%. And the
20 consequence is an investment in an 80 year asset is cash flow negative for many,
21 many years even though you're getting the WACC on that asset.

22

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

27

28 MR SADEH: It'd be rare to see negative outlooks on ratings of utilities other than
29 because of changes in the regulatory framework or determinations. It would be a very
30 brave buyer to buy something on a negative outlook and probably wouldn't satisfy a
31 bank CP which will actually say I want a rating of X/stable.

32

33 The second thing is before you go through any material changes to your capital or your
34 capital structure - sorry, capital expenditure and capital structure program you spend a
35 lot of time with rating agencies and get some form of feedback of no, we don't like that,
36 that would lead us to do something and they'll pare it back before it gets finalised.

37 PROF JOHNSTONE: Remember also these ratings are actually interpretations of the
38 financial performance measures that we were talking about before, the very things that
39 we think we should look at directly rather than rush to the ratings agencies expression
40 of them.

1

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

6

7 MS CIFUENTES: No.

8

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

14

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

18

19 MS CIFUENTES: Yeah, I thought it was a big issue.

20

21 PROF GRAY: Yeah, that is something which we said we ought to do.

22 DR MIRRLEES-BLACK: No, I think that's right. Yes, it was one of the questions that
23 we had amongst ourselves which is if this did have a role under a non-binding
24 guideline is it harder for it to play a role under a binding guideline. There's obviously
25 an issue there. Okay, well we've reached the end of financeability a bit early so
26 perhaps we can move to the next section on the agenda which is raising any other
27 issues that the experts think we should be covering and then concluding remarks on
28 what we've learnt during the day. So I think I will open it up for everybody to make
29 remarks on--

30

31 MS CIFUENTES: Can I just intervene? Those that need to go early because they've
32 got flights now would be a good time, Paula? Just so you know they're not leaving just
33 because of a lack of steam.

34

35 MS CONBOY: Thank you very much.

36

37 MS CIFUENTES: Okay, there we go. No other issues, we've exhausted the rate of
38 return thank goodness, I thought it would never happen.

1

2 DR MIRRLEES-BLACK: So any other issues that the experts would like to raise that
3 perhaps we haven't covered in the--

4

5 PROF JOHNSTONE: My overall perception is that the panel this group is - could be
6 better balanced and I would love to see a country like Australia have someone
7 representing the manufacturing industry here. Because you know it is a one-sided
8 discussion.

9

10 MS CIFUENTES: You mean the panel of experts?

11

12 PROF JOHNSTONE: Yeah, I think the panel it is a bit unfairly balanced in terms of the
13 regulator hearing all the views that would exist in community for example.

14

15 MS CIFUENTES: So just to that point. The remarks that I was making when I opened
16 the session was to say that this is only one aspect of the consultation process.

17

18 PROF JOHNSTONE: Yeah.

19

20 MS CIFUENTES: And I am very mindful of the fact that it is very difficult to actually get
21 a representative voice for some sections of the community.

22

23 PROF JOHNSTONE: Sure.

24

25 MS CIFUENTES: That's, you know small medium enterprise is actually particularly
26 difficult because even within that categorisation you have very divergent interests.

27

28 PROF JOHNSTONE: I could imagine how over in the US for example where you've
29 got a much bigger manufacturer sectors as part of the economy you have a different
30 makeup of people on a hearing like this.

31

32 MS CIFUENTES: We've also tried to get the views of a broad range of stakeholders
33 but you can appreciate that trying to explain, for example, I mean we haven't even got
34 into the detail of the traditional groups, you know to use your language. We still
35 haven't really got into the detail of that. Even this type of debate and conversation is

1 beyond the financial resources and capability of a lot of those stakeholders. So even
2 though we do try and extend that consultation process it is by its nature--
3
4 PROF JOHNSTONE: Sure, I get that. But I think that probably their power crisis is not
5 helping their ability to put somebody in.
6
7 DR MIRRLEES-BLACK: Okay, well we obviously noted that. If we go round the table,
8 Graham, do you have any other issues?
9
10 ASSOC PROF PARTINGTON: I think I've said it.
11
12 DR MIRRLEES-BLACK: Okay, Ilan?
13
14 MR SADEH: Same.
15
16 DR MIRRLEES-BLACK: Greg?
17
18 MR HOUSTON: I don't have anything to add.
19
20 PROF GRAY: I was just going to ask if I can take this name plate home, my kids, they
21 won't believe that I'm an expert unless I have some documentary evidence.
22
23 MS CIFUENTES: Stephen--
24
25 ?: Which is ditto for my wife.
26
27 MS CIFUENTES: Let me tell you, my kids just have no faith in my ability to do
28 anything about energy prices so. Rightly so. Rightly so. I don't think the name plate's
29 going to help. Maybe if I put professor or doctor.
30
31 DR MIRRLEES-BLACK: Well I don't think I should attempt to summarise everything
32 that's happened today, I think that would be too hard. But as everyone knows there is
33 a joint paper being prepared which will summarise the discussions and developments

1 of the thoughts among the experts and any agreed positions and clear statements of
2 disagreements. Is there any other remarks, Cristina, Jim that you'd like to make on the
3 process or next steps or 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 of all
11 thank you all very much. I take your point that the panel could be better balanced and
12 there is a range of views that we may not be accessing. But notwithstanding that I
13 think as the first of the concurrent evidence sessions has actually been very
14 successful. I think it is very useful to hear some of the views and tease out some of
15 those questions. So thank you. We will be publishing an internally reviewed version
16 but it will be un-proofed transcript to today's session. That will be on our website
17 tomorrow I think. Then you will have an opportunity to review that and fact check it and
18 we will publish the proofed transcript as soon as possible.

19

20 We are going to have a similar publication process for the second concurrent evidence
21 issue on 5 April, which is shortly after Easter I think so fill yourself up on hot cross buns
22 and Easter eggs we'll need them. We currently have a consultation window for
23 submissions on both the discussion papers we've published in advance for the
24 concurrent evidence sessions and the transcripts of those. The subs are due on
25 20 April.

26

27 A number of stakeholders have suggested we should extend the time for submissions
28 and also for our draft decision and after consulting with a number of stakeholders
29 we've decided to extend the time until 4 May. Did you know that?

30 MR SMITH: I do now.

31

32 MS CIFUENTES: Our draft guideline will be published at the end of June. Okay, so
33 we look forward to those submissions in the next concurrent session on 5 April. Thank
34 you all very much for participating.

35

36 **ADJOURNED**

37