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TRANSCRIPT
OF PROCEEDINGS

PRODUCTIVITY COMMISSION

INQUIRY INTO AUSTRALIA'S URBAN WATER SECTOR

DR W. CRAIK, Presiding Commissioner
DR W. MUNDY, Associate Commissioner

TRANSCRIPT OF PROCEEDINGS

AT CANBERRA ON MONDAY, 29 NOVEMBER 2010, AT 9.03 AM

Continued from 9/11/10 in Sydney

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DR CRAIK: Welcome to the public hearings for the Productivity Commission into Australia's urban water sector following the release of our issues paper on 27 September. My name is Wendy Craik and I am the presiding commissioner on this inquiry and with me is Associate Commissioner Warren Mundy.

The purpose of this round of hearings is to get comment and feedback on the issues paper and facilitate public participation in the inquiry process more generally. Prior to these hearings in Canberra, we have met with interested parties and individuals throughout Australia. During October we held roundtables in Perth, Sydney and Melbourne. Hearings opened in Sydney on 9 November. Following today's proceedings hearings will also be held in Melbourne, Perth, Adelaide and Hobart. We will then be working towards completing a draft report for publication some time in March next year, having considered all the evidence presented at the hearings and in submissions, as well as other informal discussions. On release of the draft report, there will be a further round of public hearings and submissions and a final report is due to the government in July 2011.

We like to conduct all hearings in a reasonably informal manner, but I remind participants that a full transcript is being taken and, for this reason, comments from the floor cannot be taken, but at the end of proceedings for the day, I will provide an opportunity for any persons wishing to do so to make a brief presentation. Participants are not required to take an oath, but should be truthful in their remarks. Participants are welcome to comment on the issues raised in other submissions. The transcript will be made available to participants and will be available from the commission's web site following the hearings. Submissions are also available on the web site.

To comply with the requirements of the Commonwealth occupational health and safety legislation, you are advised that in the unlikely event of an emergency requiring the evacuation of this building you should assemble outside the stairwell which is out through the door there and await further instructions from the fire warden.

I would like now to welcome our first participant, ACTEW Corporation, and could I ask you both to introduce yourselves and say your position and organisation just for the record and then if you'd like to make a brief opening statement we'd certainly welcome that.

MR McILWRAITH (ACTEW): My name is Kerry McIlwraith, I'm the chief financial officer for ACTEW Corporation.

MR KNEE (ACTEW): Ross Knee, executive manager water, ACTEW.

MR McILWRAITH (ACTEW): On behalf of ACTEW Corporation I'd just like to

make a brief opening statement. We've provided a written submission. We've just tried to address in a very concise manner four issues: supply, augmentation, pricing, the legal framework and innovation under regulation. Just as background, ACTEW is somewhat unusual in the water industry, it is not only a territory-owned corporation but it is a Corporations Act corporation, so it has all the responsibilities of the Corporations Act and it might be something that the Productivity Commission could consider in their institutional arrangements. Having worked in other states, one of the advantages of Corporations Act corporation is all the requirements of a normal corporate apply, rather than special arrangements that might apply in different states.

ACTEW owns water and sewerage plants in the ACT and from a financial perspective we've got a historic cost which is supported by an impairment test that accountants have to do each year of about one and a half billion, but the assets are worth getting towards three billion at replacement cost at around about this time. We haven't done a replacement cost test in recent years but we're certainly finding that prices have rises in building infrastructure assets. One of the interesting features of building our dam, as my colleague can elaborate on, is that we've had to acquire a lot of expertise from overseas, particularly the United States because there is very limited expertise in Australia related to building dams. So part of the design's expertise was from the US, as is the crushing plant, as is a lot of the other equipment that is going into it.

We're licensed under the ACT Utilities Act and service about 145,000 water and 140,000 sewerage customers and we provide water in bulk to Queanbeyan which has a population of about 37,000 people. We're subject to territory regulations through the ACT's Independent Competition and Regulatory Commission. ACTEW has a somewhat unusual structure for the water industry here. It's really simply an executive team. Most of our functions are outsourced to a joint venture between ACTEW and the Jemena group which is owned by Singapore Power. The joint venture ActewAGL Distribution operates and maintains and constructs in general, aside from the water security program, most of the water and sewerage networks and assets for ACTEW.

In relation to supply augmentation because of the recent drought - although there have been some significant debates in the ACT about how bad the drought has been - we're constructing a new dam which will raise the storage of the Cotter Dam from four to 78 gigalitres and we're seeking approvals to transfer water from the Murrumbidgee River to the Googong Dam via Burra Creek. We've also acquired rights to water and we hope to have those released by Snowy Hydro from Tantangara so that we can access them. From an economic perspective the interesting pieces of this were that we used a net economic benefit approach to deciding what infrastructure to build which is social cost-benefit analysis, the costs of the capital and operating costs and the benefits were really the cost of avoiding water

restrictions.

So we've undertaken large surveys with customers in Canberra to see what they would be prepared to pay to avoid water restrictions of varying severity. That is an ongoing task and we will be doing another round of that before our next regulatory review. They hydrological approach was determined stochastically and based on the CSIRO climate predictions so that we had a way of going forward. We have approached it from an economic point of view rather than simply a timing restrictions point of view I guess is the main feature.

Coming directly to urban water pricing, one of the curiosities of coming to the water industry is it does remind me of the electricity industry probably back in the 1990s. The work by the PC in looking at returns on equity, for example, for water companies indicates that they're very low, very much like electricity companies. So if we ever wanted to progress to some sort of competition, prices would have to be raised to get the return on equity up and certainly at the retail end of the businesses, not much margin there. So again it's a classic electricity problem, prices would have to go up fairly substantially.

One of the other peculiarities is that we apply restrictions which seem to so unpopular with customers but what happens then in 12 months' time, largely because their costs are fixed, volumes go down and everybody then complains that, "Wait a minute, we reduced our consumption but now you're charging us more, it's terribly unfair." So there has been considerable discussion in the industry about drought pricing, we did put a proposal to our regulator last time but we will be doing the same again and it just seems reasonably commonsense that if you put in restrictions you probably should raise the price at the same time to provide a double signal that times are looking a bit concerning rather than wait a period and then find prices have gone up when consumption has actually gone down.

One of the other things is that our prices are certainly no longer flexible. We don't have any flexibility in pricing, so one of the things about revenue cap regulation particularly in relation to water is you do have these very great range of availabilities of water, particularly in inland cities at least and so flexibility in prices would be a generally desirable thing that you could manage. In terms of the framework for economic regulation, one of our involvements is that ActewAGL Distribution also manages gas and electricity networks in the ACT and ACTEW has a half-share in that business, so we have had an opportunity to look at the national energy regularity regime.

I think our general view would be that there are a collection of things that appeal to us, well-defined rules for making proposals, separation of rule making and enforcement, bound to the discretion of the regulator. It's quite difficult it would appear in, water regulators seem relevantly unconstrained at the state level but the

federal level for electricity that has been a bit better managed, properly improved over time and in electricity at least the presumption of the acceptance of a service provider's proposal, unless it's shown to be unreasonable, and a framework for some sort of independent merits review and judicial review just to ensure the process of procedural fairness gets a reasonable run and it's not available in a number of state jurisdictions. That would complete our statement.

DR CRAIK: Thanks very much for that and thank you for your submission which was very brief but very helpful which we appreciate, given the numbers we have to read.

MR McILWRAITH (ACTEW): We're a very small team.

DR CRAIK: I've just got one question and then I'll hand over to Warren. My question really is in terms of the options that you looked out for supply augmentation and, Kerry, you did make some reference to this, was the notion of not purchasing high security entitlements, say, from Murrumbidgee irrigators. Did that turn out to be more expensive on your cost-benefit analysis than the Cotter Dam approach. On the face of it and just from my small understanding of these things I would have thought it was a reasonable option.

MR McILWRAITH (ACTEW): It is a reasonable option. One of the things we have been looking at is using real options analysis to apply to some of these projects. One of the clear things that came out of that was that with the dam the one certainty you had was it was all in one jurisdiction and therefore there was reasonable possibility you would get that up in a reasonable time frame. We started the three projects, the pipeline buying water for transfer at the dam, all at the same time. The only one that we're well under way with is the dam.

DR CRAIK: Right.

MR McILWRAITH (ACTEW): So in a real options analysis once you introduce uncertainty what became apparent was that the dam would be chosen almost on every occasion because you had more possibility of getting it up and its been borne out as we've gone through it but the others just have been very difficult to get into place.

DR CRAIK: Is that just because of the challenges of interstate trade and - - -

MR McILWRAITH (ACTEW): Yes, interstate trade getting interstate agreements, the environmental issues associated with each one and different environmental regulators. The Murrumbidgee-Googong pipeline had to go through New South Wales, the ACT and the feds to get decisions and they had different views. We've managed to get two down and the third one we have an approval of

sorts to proceed. But it's the uncertainty of progressing those that makes it difficult. We're still negotiating after some considerable period with Snowy Hydro about releasing the water in an amount that works for us as well. But to get that project to work we also need the pipeline so that we can pump the water, otherwise we wouldn't be able to pump enough to make it a worthwhile proposition.

DR CRAIK: Okay, thanks very much.

DR MUNDY: You mentioned you're a Corps Law agency which obviously protects the directors from political interference inasmuch as they don't worry about their reappointments, I guess. But more generally, is there any provision in the enabling legislation for the ACT government to issue directions to yourself?

MR McILWRAITH (ACTEW): There is.

DR MUNDY: Briefly how does that work?

MR McILWRAITH (ACTEW): It's meant that it has to be tabled in the ACT assembly. There's never been a direction actually to do anything, so it's a very transparent and clear process and as you pick up, the very desirable feature is that it protects the directors from - - -

DR MUNDY: Just a related point, the decisions to impose restrictions within the territory, is that a decision of ACTEW or is it a decision of ministers?

MR KNEE (ACTEW): No, it's a decision of ACTEW, it would go to the government and then consult with them and the EPA.

DR MUNDY: Okay.

DR CRAIK: So a decision to actually augment is yours, the government's or do you need approval or what?

MR KNEE (ACTEW): We make the decision but we go to the government for endorsement.

DR CRAIK: Right.

DR MUNDY: I'll ask the obvious hypothetical. If they say no, how do you think it would play out?

MR KNEE (ACTEW): We haven't come across that situation. The material we provide them is so good - - -

DR MUNDY: Yes, it's compelling. Yes, I understand the problem. You made a number of really helpful and interesting observations about regulators and the broad scope of regulatory discretion. I would find it helpful if you just outline what the extent of that scope is and where do you think it would be desirable to pare it back and how you might deal with the scope of that discretion because you're right, there seems to be a lot more discretion for regulators in water than there is elsewhere.

MR McILWRAITH (ACTEW): We haven't progressed that dramatically but we looked at the energy rules and we didn't want to - I've forgotten how many volumes it is, but it just seemed like a horrific amount but the process seemed to be much simpler and the results seemed to be clearer and more transparent all the way through and that was attractive. It would mean, if it was national, there would have to be some sort of national guidelines which would be more complicated in water because of the nature of water.

DR MUNDY: Somewhere in your submission you made an observation about the charge that the regulator had in balancing up all these different things, which I think is fair enough, but I guess what I'm getting at is do you think that you get better regulatory outcomes if the regulator was perhaps more focused? I guess the other question is how does the extent of that discretion relate, do you think, to this absence of any merit appeal, which is pretty common throughout the other utilities, but also under the Commonwealth trade practices law?

MR McILWRAITH (ACTEW): We certainly are attracted to the merit appeal process and the variety of objectives which are conflicting in most of the state regulators' legislation makes it almost - you can pick and choose whichever one you like and arguing with them for a long time over that, because a more constrained view would help both sides, I think, in terms of clarity.

DR MUNDY: You mentioned the perversity of rising prices in the face of diminishing scarcity, which is always something that amuses economists. How do you see that issue being resolved within your regulatory framework? Is it a case of perhaps segmenting out the bits of the regulation so the infrastructure is regulated differently to the water supply or is there a way through this?

MR McILWRAITH (ACTEW): We've had a look at that. It doesn't seem to work very well, particularly for an inland city. It might work well where there's a number of suppliers. What my colleagues have been doing for the last seven or eight years has been connecting all the suppliers together. So, as a background, as I understand it, the Bendora Dam, which is one of our medium-sized dams, supplied all of Canberra. Most of the time it required very little processing, the water was relatively clean. As we've got into more difficulty, the supply options have meant we've had to redo all our water plants that they can take any sort of water, so the cost has automatically risen right across the board there. Sorry, your other point?

DR MUNDY: What do you see as the solution to the issues? I mean, is it a shorter regulatory period that is more likely to be adaptable to changes in supply or - - -

MR McILWRAITH (ACTEW): Potentially a revenue cap arrangement seems more appealing in the - we're going to have a good couple of years, it would appear. Our dams are 90 per cent full. But our revenue cap then provides that flexibility to move up and down, provided you can manage around the cap - - -

DR MUNDY: So it's a revenue cap over a period - - -

MR McILWRAITH (ACTEW): Over a period, yes.

DR MUNDY: So you can claw it back yourself, rather than having to go back at the next regulatory decision.

MR McILWRAITH (ACTEW): Yes.

DR CRAIK: Can I just interrupt and ask when you look at the costs of restrictions and things when you're doing these analyses, do you look at all the costs, including things like impacts on sports grounds, impacts on people's domestic gardens and all those sorts of things?

MR McILWRAITH (ACTEW): We have to some extent but the driver has been very much a combination of business and ACTEW has ended up with a team who talk to business all the time trying to understand their issues and that seems to have worked quite well, but it's the householders more than anything else. One of the criticisms of the studies that we did, we didn't include the capital costs of putting in tanks and buying all the equipment and everything like that, but it was mainly we wanted to do the right thing but it was just their costs and, in some senses, the economic waste of them carting water rather than doing something that might be more productive.

DR CRAIK: Have you looked at the possibility of people having optional tariffs so that they could pay more for more water than - - -

MR McILWRAITH (ACTEW): That does seem to be one of the potential ways forward. We're trying to look at the potential for competition rather than the source. But at the retail end we have larger customers and then potentially to provide some sort of tariff that provides certainty, but managing that would be quite interesting. I think the other thing that's struck me over time is that as prices get probably up to a more economic level, like gas and electricity, you know, you will have had the potential of theft which will rise much more significantly than probably exists at the moment and that will be an interesting engineering problem, given where all the

meters are located. Certainly in electricity it's a major issue of trying to keep people going round your meter all the time.

DR MUNDY: Since restrictions have been relaxed, have you seen any change in the level of demand?

MR McILWRAITH (ACTEW): No. We're very interested to see what happens but so far nothing. It's only been relaxed a month so it's a bit early to see.

MR KNEE (ACTEW): Plus it has been raining most of the time.

DR MUNDY: Yes, I know. It's running down the street in Narrandera at the moment.

MR KNEE (ACTEW): In a normal year you always have that lag in spring, people are slow to start watering and then in autumn they're slow to stop.

DR MUNDY: Have you done any work on the price elasticity in the ACT for water?

MR McILWRAITH (ACTEW): We have. We need to do some more there but it came up with the usual results that it wasn't very elastic, so interesting.

DR MUNDY: If there has been a structural shift as a result of this period of drought and people's behaviours have changed, do you expect that's going to be likely and, if so, how significant?

MR McILWRAITH (ACTEW): I think, just to pick up your point about the change, it took some time for the restrictions to bite and then they bit fairly suddenly and then it stabilised. The other thing that becomes obvious living in Canberra is that a lot of grass has gone, a lot of gardens have gone, there is a lot more mulch and stone and all sorts of things going in instead, so that change would take some considerable time to reverse again.

MR KNEE (ACTEW): It's also government policy, as I said, to achieve a 25 per cent reduction in potable demand, so we would expect that change to be within that 25 per cent.

DR MUNDY: I guess the ACT, given its economy is a bit different to other cities around the country. The opportunity for substituting non-potable sources to meet demand is probably much more limited for you than, say, and industrial city like Melbourne. Is that the case, do you think?

MR KNEE (ACTEW): Our sewage treatment plants are at the bottom end of the

city so, yes, to pump it back up is quite expensive. Plus what we put down the river goes to Wagga, to Adelaide, so it is a valuable resource. It's just a quality issue that we're trying to address.

DR CRAIK: Clearly during this drought the role of education and moral suasion campaigns has been actually very strong and very effective. Do you think there's a possibility from you experience in this area that with the same effort in public education and explanation you could achieve the same thing if you were looking more at price to manage demand that you're being a good corporate citizen by reducing your demand, because we don't take the same view about using petrol in cars and things like that.

MR McILWRAITH (ACTEW): I guess thinking when the last oil shock hit there was a significant reduction in the usage of petrol and there was a sudden drop in sales of four-wheel drives and all that sort of thing.

DR CRAIK: Temporal.

MR McILWRAITH (ACTEW): Yes, exactly, and then it went away. That's the same in some senses, it just seems to me that the signals are completely out of line and I think because of the public enthusiasm for restrictions versus prices, we would want to continue with the public education campaign but we just need to reinforce it with a price adjustment at the same time.

MR KNEE (ACTEW): I can assure you some of the government departments are screaming blue murder with the high water prices, $4 a kilolitre, it's drastically affecting their budgets so they're looking at every avenue to try and reduce just on a price basis.

DR CRAIK: Okay.

DR MUNDY: Just one of the things that characterises the industry around the country is just the variation and scale and scope of businesses and you're sort of a medium-sized, granted isolated utility. Do you have a sense on where scale and scope of economies cut in and where the diseconomies cut in?

MR McILWRAITH (ACTEW): I think one of the advantages for us is having ActewAGL Distribution doing electricity, gas and water so we are getting some scale economies in certainly administration across those areas and that has been very helpful. For example, our gas and water are billed all through the same billing system. If we didn't have electricity, it would be a much more expensive and difficult proposition just to bill water through one billing system for such a small number of customers.

DR MUNDY: So it's mainly in that administration area?

MR McILWRAITH (ACTEW): Certainly the admin side is the side I see.

MR KNEE (ACTEW): We compared figures in the National Water Commission benchmarking report each year and we haven't identified any significant difference. That's not to say there isn't.

DR MUNDY: So you're not of a view that you're too small or too big, it's - - -

MR McILWRAITH (ACTEW): We haven't found anything that jumps out at us that says we're way out of our line there.

DR CRAIK: So do you bill water - is it all one bill, electricity - - -

MR McILWRAITH (ACTEW): No, they're separate bills but it's all through the one system.

DR CRAIK: One billing agency, okay.

MR McILWRAITH (ACTEW): Yes.

DR MUNDY: You showed some interesting flexible pricing in your submission. I guess it's partly to do with the nature of the way your regulatory system works that your prices go up when it's not scarce. Do you see a problem in how you pursue that in the context of having a price regulator? Is that the part of the challenge that flexibility and price control aren't natural bedfellows?

MR McILWRAITH (ACTEW): Yes, but I think it's essential we progress it in some way. The general approach we were taking was to try and tie it with dam levels, so that was very explainable to anybody that once dam levels were down then restrictions were on and prices would rise. My hydrological colleagues would be concerned with a single variable like that because there are so many other issues there but I thought we could get it down to two anyway which is an outlook variable as well, say, the outlook - even though the dam is a bit low - is very good, therefore, you might not do it. But if the outlook was poor, then you would take that on.

DR MUNDY: So you would almost need, in that sort of framework, to have this multi-year aggregated revenue cap that you were talking about before so you could move it up and down presumably so you didn't have to go through the regulatory process every year.

MR McILWRAITH (ACTEW): Yes. In the previous regulatory decision we had an adjustment each year which meant you had these catch-ups or adjustments

backwards and forwards but that has gone away as well and so if you leave it all until the end of the period, you end up with a potentially very large adjustment which can then throw everything out.

DR MUNDY: You mentioned return on equity before. Is ACTEW unhappy about the return on equity that's there or is that an observation more generally across the industry?

MR McILWRAITH (ACTEW): It's more generally but if I was looking after my shareholders I would be concerned that they're only getting 3 or 4 per cent and the industry on average, 2 or 3 per cent, rather than the 10 or 11 that the regulator is allowing.

DR MUNDY: So the regulator is allowing 10 or 11, so where is the - - -

MR McILWRAITH (ACTEW): In the volumes that the regulator selects to allow the prices. So we have a price, but we don't agree on what the volumes are going to be sold over the period, so the regulator ends up with a higher volume than we do.

DR MUNDY: So some sort of merits based appeal might assist in - - -

MR McILWRAITH (ACTEW): Yes, in managing that arrangement.

DR CRAIK: Just back to the flexible pricing issue. How often would you like prices to be set if they're going to be set by a regulator?

MR McILWRAITH (ACTEW): I think a five-year arrangement is okay, just dealing with your own billing systems makes it difficult to implement. There is work now just to try and work out the timing but annually seems probably the most likely adjustment for us. We think it would be too complicated and all the communications would be quite difficult to get it more regularly. We're not in the petrol business.

DR CRAIK: Just one final question. When you considered your three options for augmenting the ACT's water supply, the cost benefit analysis on that, was that made public?

MR McILWRAITH (ACTEW): Yes, it's all on our web site. There were nearly 20 options that were considered, including a desal plant on the coast. So there was quite a wide range and there was some enthusiasm for other dam sites and things like that and these were all tested.

DR CRAIK: All in the public arena.

MR McILWRAITH (ACTEW): Yes, all in the public arena.

DR CRAIK: Was there much interest from the public?

MR KNEE (ACTEW): From selected people.

DR CRAIK: But as a general rule, right. I think we have finished our questions. Thank you very much. We appreciate you coming along today.

MR McILWRAITH (ACTEW): Thank you for the opportunity.

DR CRAIK: I will now call Sydney Water, if you're ready. Thanks very much, Kerry, for coming along. Could I invite all three of you to state your name and position for the record and then if you have a brief opening statement, we'd be glad to hear it. Thank you.

DR SCHOTT (SW): Kerry Schott, managing director, Sydney Water.

MR WILSON (SW): Stuart Wilson, manager regulatory strategy and pricing.

MR RAMSEY (SW): Alan Ramsey, general manager, finance and regulatory.

DR SCHOTT (SW): I've got a very brief opening statement that I thought we'd make. Basically we welcome this inquiry into Urban Water. It's been some time since the urban water sector has had a major going over by governments, I think. Many changes have happened, I might say, and I don't mean this in any defensive way at all but in the 80s Sydney was basically focused on large scale sewer projects and deep ocean outfalls. There was a great deal of downsizing started. The workforce at that time was over 14,000. It's now under 3000. The water board at that time became a government trading enterprise.

In the 90s the focus was corporatisation, drinking water quality, private water filtration plants were built in Sydney, most of our treatment is done through private ownership. Bulk water was separated from retail and distribution and I think one of the peculiarities of urban water is that each of the major conurbations in Australia has quite different institutional arrangements and in Sydney bulk water is separate from retail and distribution. In the 90s a lot of effort was put on the independent regulatory framework that was developing through IPART and pollution abatement came to the fore.

In the last 10 years, of course, the focus has been on the further development of the regulatory framework and the line in the sand and securing the water supply. I think going forward our challenges are catering for major population growth in Sydney, and the increasing costs of energy. Water is a major energy user. The impact of climate change, not so much in terms of rainfall which is the obvious one but because of the extreme weather events we experience, the resilience of our system, because of interruptions of power, is decreasing. In New South Wales the Water Industry Competition Act has introduced competition, and the way that's developing is quite interesting.

In our submission we wanted to make a few main points. The first one is one that we have made regularly and we will continue to make, which is an argument for independent regulation. I think that, through IPART, Sydney has been blessed with probably the most independent regulator that exists for urban water and it does provide a starting place for other jurisdictions. It does mean that Sydney Water is far

less influenced by political interference on its pricing decisions than any other company.

What we have learned through the last decade is a portfolio approach to balancing supply and demand of water, and we have basically looked at how to get supply and demand in balance, subject to getting enough volume at the lowest combination of costs and with the appropriate reliability. So we have looked at each of our options, which in broad terms are dams, desal, recycled water and water efficiency measures. But within those there's a number of different schemes and we have tried to balance our approach to all of those, to balance supply and demand, but choose the ones that give us volume, reliability and least cost combinations.

We're not opposed to scarcity pricing, but we're rather sceptical as to its practicalities, in the sense of the basic question of, "Will it work?" We flagged in our submission that we have been doing more work in this area and we have been doing quite a sophisticated econometric study using panel data. The results of that confirm that elasticities are quite low, you need to put prices up a hell of a way to have much impact on volumes, and putting prices up does not cause it to rain, which people do need to remember. The response is really largely on the demand side and it takes a long time for it to have an impact on both supply and demand, and on the demand side it doesn't have much impact.

In our submission we pointed out the way that a household uses it water, and, if you looking at that list for a reason why the elasticities might be very low, it's really only outdoor use that's more discretionary than other uses within a house. Efficiency gains have been a really major feature, in terms of water efficiency, but within efficiency gains in the industry we think it's likely to be relatively incremental, and that's just largely because we're in such a capital-intensive business that any major gain is going to be sitting on the foundations of whatever we have got so far.

Just on what has been happening with competition in Sydney, there really are no barriers of a legislative kind to competition and what we have been seeing is increasing sewer mining and increasing decentralised recycling and some water and waste water provision. But it's relatively early days. That was the main points that we wanted to make to start with.

DR CRAIK: Thanks very much. I thank you very much for your submission. It has a lot of very useful information in it, and also thank you in advance for your offers of providing us with further information from some of the studies that you do. I have just got a couple of questions. Firstly, you list early on in your submission that you have got seven corporate goals, I'm just curious on how you decide on making trade-offs and things like that, where there are trade-offs in relation to those.

DR SCHOTT (SW): We're relatively schizophrenic, to be honest. The principle

trade-off that we make is between volumes of water and increasing sales to increase revenue, and trying to be efficient, and on that one we have long since decided that efficiency will prevail, and in particular the long-run marginal cost of water in Sydney at the moment is around about $2.20 a kilolitre and anything that we can save under $2.20 we'll go for it, and, if it's more than that, it's not worth it.

DR CRAIK: My next question is about supply augmentation, in relation to the supply augmentation that's occurred in recent years, and I suppose the desal plant in particular. Who initiated that process and who approved it at the end of the day? Then, into the future, if the arrangements have changed, would the arrangements be the same from now on, if the same sort of circumstances arose?

DR SCHOTT (SW): The metropolitan water plan in Sydney is a whole of government approach and for some time it had had desalination as a possibility on its program to augment supply. The actual decision to move on the construction of the plan was initially made by the board of Sydney Water. It's such a major decision that they went and discussed it quite rightly with the shareholders. We have two shareholders, one of whom is the treasurer, who took it to the budget committee of cabinet where it was discussed, and approved at that level also.

It's not the sort of decision that a board would make without having a chat to higher powers in the land, and that was what happened. The decision was based on dam storages at the time, which were just above 30 per cent. At that stage we were running down storages at the rate of about 15 per cent a year, and we knew that the desal plant would take over two years to construct, even though we were well advanced with the planning, but there was a small but very real probability that the city could run out of water if the desalination plant wasn't commenced. So it was that sort of reasoning.

DR CRAIK: The ERA in WA has proposed the notion of an independent procurement entity. For a place like Sydney, do you see that there's any value in that sort of a separate structure, as opposed to it coming from, say, Sydney Water?

DR SCHOTT (SW): I don't think there is for us, because we're so large, and we actually do have a very efficient capital procurement division. Our steady state capital procurement is about 700 to 750 million a year, every year that's what we spend. About half of that is needed for renewals and the other half for new growth, and it goes above that of course when we're doing major recycled water plants or desal. With a capital spend that big, you really need to know how to do it yourself I think.

DR CRAIK: Thanks. Warren?

DR MUNDY: Just on your capital program - part of it's obviously augmentation

and part of it's renewal - is there any sense in which the renewal part of the program is catching up from maintenance which may have been optimally done in the past?

DR SCHOTT (SW): I don't think so. There was a period in the early 90s when Sydney Water, I personally think, didn't devote enough resources to renewals and had quite severe capital constraints, which I think it probably imposed on itself rather than anyone else doing it, but we're pretty well catching up on that. You wouldn't believe it after the couple of weeks we have just had, but our main breaks are down quite substantially, and our sewer chokes also, so you can actually see the evidence for that in the data.

DR MUNDY: Your corporate structure - we just heard from ActewAGL, they're a corps law company.

DR SCHOTT (SW): Yes.

DR MUNDY: You're not?

DR SCHOTT (SW): No, we're not, we're instituted under the State Owned Corporations Act of New South Wales. It passes by corps law; not much though. We're very similar in board structures and responsibilities and the like.

DR MUNDY: Criminal sanctions for director behaviour?

DR SCHOTT (SW): No.

DR MUNDY: Provisions in the prevailing state legislation for ministerial directions tabled in parliament, similar to the CAC Act?

DR SCHOTT (SW): Only if tabled in parliament and only specifically through the operating licence, which IPART recommends to the minister, who has the power to put things in if he wishes to or not, as the case may be. That is the form of government intervention. The operating licence sets, basically, operating standards and response times to leaks and various things of that kind.

DR MUNDY: That is done by the minister on the recommendation of IPART?

DR SCHOTT (SW): It's essentially done by IPART because it is a rather long and technical sort of document. But ministers have, from time to time, put things into operating licences about: time to get to leaks; the Priority Sewerage Program is in the operating licence and probably wouldn't be there if IPART were just doing it on their own.

DR MUNDY: In IPART setting the standards, what sort of analysis are they

undertaking; are they looking at cost-benefit analysis on the standards themselves?

DR SCHOTT (SW): The operating licences are reviewed every five years. They basically take into account what we have currently got and what they think we should be doing. The general pattern of it is that the standards just step up each operating licence. The body within IPART that focuses on the operating licence is relatively separate from the pricing people, so there is not much chatter between them about the cost of those things.

DR CRAIK: Is there a cost-benefit analysis for increasing standards?

DR SCHOTT (SW): I don't know.

MR RAMSEY (SW): I don't know.

MR WILSON (SW): I don't think so. They do look at those things, but not formally every licence period. I think IPART feels that there are some other regulations in the environmental area, that perhaps should be brought more within the net, that they don't look at either.

DR MUNDY: So the nature of their assessment of these conditions is they publish these and there is a basis for the decision? Or is it just what IPART thinks is right?

DR SCHOTT (SW): There would be, but I would really address that question to IPART.

MR WILSON (SW): It is a full public hearing process and a full transparent process with submissions by Sydney Water, submissions from the public hearings, and a draft operating licence, so it's not a closed process.

DR MUNDY: Given that the licence is ultimately granted by the minister, there is no merit review of the recommendation of IPART because the minister is the decision maker?

DR SCHOTT (SW): He is, but I would encourage him not to go to that particular position. Because while he does have the right to add to the licence or extract from it, it is not a document that is changed by minister, excepting very little.

DR MUNDY: But there is no merit review of IPART's recommendation?

DR SCHOTT (SW): Not through that process. But in our price determination IPART hires engineering consultants and consultants to look at operating efficiency and capital efficiency, so they have outside opinions done on, basically, our asset base and on the way we operate.

DR MUNDY: But, again, when the final tariff order or whatever it is called - when the pricing determination is made, there is no review of that decision available to Sydney Water?

DR SCHOTT (SW): Not by us there's not, no.

DR MUNDY: By any other party; disgruntled consumer: "Prices are too high. What do I do?"

DR SCHOTT (SW): Yes, there are public hearings where - the way the process runs is we make quite a detailed submission of what we want, both in terms of our operating licence and also in terms of our prices, separately. Other people who are interested also make submissions. Some of those submissions are not trivial submissions. They are quite serious and important submissions, and IPART does take those into account in forming its view.

DR MUNDY: But once it has formed its view?

DR SCHOTT (SW): Once it has formed its view it has formed its view, and that's it.

DR MUNDY: That's it?

DR SCHOTT (SW): Yes.

DR MUNDY: Okay.

DR SCHOTT (SW): The price determination is a four-year determination, as distinct from the operating licence which is five-year determination.

DR CRAIK: Do you think the price determination should be more frequent, or would you prefer it more frequently?

DR SCHOTT (SW): No, not particularly. I don't have a strong view on it actually. IPART have recently asked us whether we have a view on it and we've just thought, "Well, if it's not broke - so why fiddle with it." It doesn't really matter to us.

DR MUNDY: You mentioned that you have recently been doing some econometric work on demand elasticity?

DR SCHOTT (SW): Yes.

DR MUNDY: That perhaps it is lower than what some people might think, and that

is what is indicated in your submission. Does that piece of work go to elasticity estimates for non-potable uses or is it just a single headline?

DR SCHOTT (SW): No, it's on potable drinking water. Just on the matter of non-potable uses, they're linked with potable water prices; in that you can't, as a seller of water, sell non-potable water for more than what you charge for your drinking water. You're always caught in, "We've got to keep to below that to get any volume of it away." There are, in Sydney, partly because of our geography, very few places where we can produce and sell recycled water for less than the cost of potable water.

DR MUNDY: Your submission says that you have about a 20 per cent increase in customers seeking assistance over the last two years.

DR SCHOTT (SW): Yes.

DR MUNDY: Roughly what proportion, in total, of your customer base is that?

DR SCHOTT (SW): It's quite small. I would have to check the number, but it is in the thousands, compared to a population of 4.3 million.

DR MUNDY: Broadly, what assistance do they get? Are they able to defer their bills?

DR SCHOTT (SW): They can defer their bills, we also work with a number of aid agencies and offer no-interest loans, and we also offer, particularly for pensioners, assistance with dripping taps, more efficient washing machines and those sorts of direct interventions, but they happen through four or five NGOs that we work with.

DR MUNDY: Do you cost what that assistance program to yourself costs?

DR SCHOTT (SW): We work out what we think it is going to cost each year and budget for it as part of our costs. We have always taken the rather dry economic view that it is better to get the water prices where they ought to be and help people who struggle with it than try to fiddle with the prices or keep the prices artificially down.

DR MUNDY: You mightn't know this, but is your sense of this increase in hardship assistance is the result of general economic conditions rather than peculiar issues with the rising price of water?

DR SCHOTT (SW): I don't actually think it is directly connected to the price of water, though that doesn't help. But more recently what we have noticed in Sydney is that the impact of rising power prices seems to have had quite an impact and

people's power bills have gone up rather a lot.

DR MUNDY: So it is issues with general cost-of-living rises.

DR SCHOTT (SW): That's right, and it's general economic conditions too.

DR MUNDY: You mightn't know this, but presumably the electricity distributors experience a similar phenomena?

DR SCHOTT (SW): I imagine they would be, I don't know. I do know that other water utilities are, which WSAA would be able to give you some more detail on.

DR MUNDY: Okay. You made mention of the Water Industry Competition Act. I know that your organisation has also had some experience with Part IIIA.

DR SCHOTT (SW): Yes, we have.

DR MUNDY: As have we all. I got a bit of a sense from reading the submission that I think - my take on it was that not much has come of the new access arrangements, but the licensing regime has been the thing that's created most benefit. I mean, have I got the wrong end of the stick there or could you elaborate a bit more on that for me?

DR SCHOTT (SW): Not much has come of it in the sense that we haven't got people popping up and wanting to compete directly with Sydney Water as a utility, but what has popped up are players getting licences to mine our sewers and provide recycled water in particular places, and local councils and golf clubs fall in that category. The other sorts of players that have popped up have been Veolia, who is providing sewerage services to a new development, for example, near Picton and someone - I'm not sure who - is providing water and waste water services at a new development at Pitt Town. So what happens there is that Lend Lease or whoever is developing a particular thing will get together with them to bring on the water and waste water. We often end up working closely with them because they usually can't manage everything on site so they need a sort of fall-back if things don't always work well or they need a fall-back for discharges into our system.

DR MUNDY: So it's much more a - - -

DR SCHOTT (SW): It's a more localised - - -

DR MUNDY: They're almost opting out, in a way.

DR SCHOTT (SW): They're opting out temporarily often because they're far away from our system and they want to develop before we want to get there. So they're

opting out in that sense.

DR MUNDY: But they're not setting up as a competitor. They're really just doing their own thing in a lot of ways.

DR SCHOTT (SW): Yes.

DR CRAIK: Is there a long-term problem in the sense that once they've developed a residential development, they move on to the next thing and leave that running and then you're left - I mean, is that a potential problem in the long term or is it covered in some way?

DR SCHOTT (SW): As long as the operators are licensed, it's not a potential problem because IPART is careful, I think, with its licensing to make sure that they are good operators. There is a potential problem in the longer term which the public health people are concerned about, which is the development of recycled water units in high rise buildings, which is increasingly common, which by and large we support, but the people who put those in and run them do get a licence, but they're regulated by councils, rather than by IPART, and the public health people are concerned about council not having sufficiently robust regulation to regulate that on an ongoing basis. There is discussion happening about it within government levels.

DR CRAIK: One of the people who appeared at our Sydney inquiry discussion about distributed systems - and he was the person selling these things - said some of the six-star buildings put in these wondrous systems and then don't actually turn them on because the regulatory maze through which they have to negotiate to run these things and also the costs of running them, they just don't bother. Once they've got the tick for a sustainable building, they don't actually use them. Is that something you're - - -

DR SCHOTT (SW): The tick wouldn't continue, I don't think.

DR CRAIK: I assume not, but at least they've got it for the construction.

DR SCHOTT (SW): Where we particularly like to see them put in and would even go so far as discussing a subsidy with a developer is where it saves us from having to augment an existing system. In Parramatta our building, which is owned by Multiplex, happens to have such a system in it, but it meant that we didn't have to spend 10 million augmenting the sewer pipe in a very old part of the city, so in situations like that, and it's the case in parts of the CBD and around the Rocks area, we're very interested in talking to people about doing more on site and less discharge.

DR CRAIK: Presumably that will apply where there's this notion of continuing to infill parts of it.

DR SCHOTT (SW): Yes, it will.

DR CRAIK: It will be increasingly common and I would suspect that the councils will give up their regulatory power to IPART and to the public health authorities.

DR MUNDY: So this standard setting arrangement which comes out of WICA, putting aside the question of whether that standard setting arrangement was optimal, would you see benefit in there being a national set of standards along those lines so that if I wanted to go and do a similar project in metropolitan Brisbane on the river, there would be one set of standards that complied nationally in the hope that it reduces costs on compliance, even if those standards perhaps were applied by jurisdictional regulators?

DR SCHOTT (SW): There's usually benefits in national standards and the water industry through WSAA does try to standardise what it's doing as much as it can. With water there's often some local geographic thing that will get in the way and make you want to do something slightly different, but that's easily addressed.

DR CRAIK: Can I take up this issue of BASIX, which requires, in these sorts of schemes anyway, particular standards in things like new homes and things.

DR SCHOTT (SW): Yes.

DR CRAIK: I mean, I guess the question I have is is the cost-benefit of those ever analysed or is it ever analysed before they're introduced and I guess is it a cost-effective way of dealing with capacity constraints?

DR SCHOTT (SW): I don't think cost-benefit was ever done around BASIX. It's a planning requirement and came from the planners. In Sydney it typically gets met in new dwellings in two ways: either by putting in a rainwater tank and plumbing that into the house so that rainwaters are used for certainly flushing toilets and sometimes for washing machines; in some areas recycled water is used to meet BASIX, rather than rainwater tanks, and Sydney water has taken a position that where BASIX is best met by rainwater tanks in the sense of being the least costly solution, that's what should happen. But if we can provide recycled water for less than that, which is at the moment a bit over $6000 a lot, then we will do that.

DR MUNDY: You made some observations about proper economic assessment and environmental standards. Are there any standards in particular that you're concerned about?

DR SCHOTT (SW): The environmental regulations are particularly relevant for us and other utilities concerning waste water discharges and very close environmental

assessment is done of those, quite rightly. In Sydney, apart from the ocean outpour plants, we also discharge into the Hawkesbury-Nepean system and the plants that discharge into the river systems have very high water treatment and are therefore very costly, compared to the ocean outpours. The environmental regulator sets discharge standards and they are currently talking to us about their desire to have no increased discharge load into the Hawkesbury-Nepean, which basically means taking whatever discharges there are somewhere else out of that area, which is extremely costly, so we're talking to them about that. IPART is quite interested in that discussion because there are costs to environmental policies that everybody needs to have a look at and the community needs to see what these costs are and whether they want to pay for it.

DR MUNDY: So would that ultimately be a transparent decision made by the environmental regulator or will they just decide?

DR SCHOTT (SW): They usually just decide what environmental regulation they would like, but IPART is taking a view on what that's likely to cost and there will be a debate about that, I think. We have a meeting with those two regulators, this week in fact, to discuss those matters. I'm sure that will lead to some public discussion.

DR CRAIK: On a vaguely related line, the fact that the energy for the desal plant comes from - or is a trade offset with the wind farm - - -

DR SCHOTT (SW): Yes.

DR CRAIK: - - - was the cost of all that factored into the cost of it and compared with a straight non-renewable?

DR SCHOTT (SW): Black energy? Yes.

DR CRAIK: That's right, non-renewable energy source.

DR SCHOTT (SW): It was a government decision that it would be a renewable energy driven plant. We also knew that that meant that the energy costs would be about double.

DR CRAIK: Yes.

DR SCHOTT (SW): Which is about what they are.

DR CRAIK: Was all that made transparently public at the time?

DR SCHOTT (SW): Yes.

DR CRAIK: Was there much opposition, much concern about that - - -

DR SCHOTT (SW): Not about - no, the tradeoff between costs and environmental outcomes I don't think is always well understood. The environmentalists like the renewable and it costs - as a fraction of a Sydney water bill it's actually not very much, but it does get to be quite hefty with many more environmental regulations.

DR CRAIK: Okay.

MR RAMSEY (SW): And the cost disadvantage will reduce with a price on carbon, I suppose.

DR CRAIK: Yes.

MR RAMSEY (SW): It's a current cost disadvantage but it may not be a long-term cost disadvantage.

DR CRAIK: I guess if - so does that mean then that Sydney Water's decisions about supply augmentation can be - I mean clearly the government endorsed that decision but the nature of the decision can be strongly influenced by - you might end up with a slightly different decision from what Sydney Water - the board making a decision itself might decide as opposed to - - -

DR SCHOTT (SW): Yes, you could. You could.

DR CRAIK: Yes, okay.

MR WILSON (SW): Just to clarify, the metro water planning process is fairly strong in Sydney. Its a whole of government process that sets out all the options. It's the board that's really taking a triggering decision. That metro water planning process has an independent expert panel that also goes through all the different augmentation options. It's not just Sydney Water making those decisions. While we have a triggering role and a seat at the table there's a wider process.

DR MUNDY: Those options that are considered for inclusion in the Metro Water Plan, they're enunciated publicly or are they - - -

MR WILSON (SW): That's right.

DR SCHOTT (SW): They are, yes.

MR WILSON (SW): The analysis - the Metro Water Plan was reviewed in the last year and the analysis is all up on the Water For Life web site, the consultants' reports. So it's a - much as the ACTEW analysis of that.

DR SCHOTT (SW): While we're on energy, can I just say that the water industry is in a rather unique position with energy because while it's a very large cost of ours we're also able to generate renewable energy at sewage treatment plants.

DR CRAIK: This is your bio gas?

DR SCHOTT (SW): Yes,

DR CRAIK: Yes.

DR SCHOTT (SW): Sydney Water is now producing about 20 per cent of our energy at sewage treatment plants using cogeneration plants. The technology to do that, in an energy sense, is not particularly sophisticated and the technology to increase the yield of gas from the plants is getting better. It's a microbiology process to basically get your bugs to work better. There's quite good advances happening in that area.

DR CRAIK: That was impressive, actually, reading your submission.

DR SCHOTT (SW): Yes.

DR CRAIK: No, it's good. There has been - during this whole drought there has been a very significant discussion about water efficiency and water conservation, I guess, rather than perhaps other alternatives like increasing price. I guess some of the participants in our inquiry have suggested that there has been an over-inflated - you know, there has been an over-focus on that as opposed to something like increasing price and therefore restrictions as opposed to some other measure. Do you agree with that approach and do you think it's appropriate? I mean it is a different approach than is taken to other aspects of the economy.

DR SCHOTT (SW): Yes.

DR CRAIK: Like when bananas were short we didn't put restrictions in on how many bananas you could buy.

DR SCHOTT (SW): No. I think in the long drought we have just had the emphasis on water efficiency and conservation was inevitable, given the situation everybody was in when it started, which perhaps is a comment on - the long-term planning could have been better. But I think on the pricing front I strongly feel that price should be set at the long-run marginal cost and anything that's cheaper than - whether you're saving it or making it, let's do it. Let's just be driven by that.

DR CRAIK: Okay.

DR MUNDY: Do you sometimes find it a little bit quixotic that on one hand you're being encouraged by your shareholders to encourage people to reduce usage and then on the other hand - I've met the New South Wales Treasury - occasionally there's a question of profitability raised. Is this a conundrum that confronts your board from time to time?

MR RAMSEY (SW): Confronts the financial controller.

DR SCHOTT (SW): It confronts Alan quite a lot, yes. He's on the side of, "What's happening to my sales?" But it does get back to price again, I think. If we can save water for less than what we're - you know, less than long-run marginal costs then that's a good thing. But the fixed costs in the water industry are so large too compared to our variable ones that it's another factor why price is pretty sticky business.

MR RAMSEY (SW): There is the apparent conundrum that in reducing the consumption you can put the price up, because of the high level of fixed costs in supply. They've all got to be covered and they don't charge with volume; so you save water and price goes up, which can be difficult to explain.

DR CRAIK: Yes, ACTEW are making the same sort of point.

DR SCHOTT (SW): Yes.

DR CRAIK: Yes.

DR MUNDY: Do you feel there's scope going forward for people to have more choice in the contractual terms around which they acquire water from you, for example, that there may be people out there who are prepared to pay up for a bit more water security? What are the impediments to pursuing that sort of consumer-oriented behaviour?

DR SCHOTT (SW): We survey our customers every year and what they tell us about pricing is a bit unusual in that they're in favour of postage-stamp pricing, including those whose prices would fall if they didn't have postage-stamp pricing. It's very much seen as a community price; that, you know, "It's water and everyone should pay the same," sort of approach. Having said that, our customers are segmented into about three groups.

The largest group doesn't want to know about anything excepting that what comes out of the tap is fine and, "Don't bother me." Then there's the next sort of set of people who are value for money conscious. They want to know that things are being done efficiently and properly and so forth. Then there's a group which might

be amenable to some particular kinds of special pricing who are very pro-innovation and sustainability and would probably pay more for more environmental things or perhaps water delivered by green energy, something different.

DR MUNDY: So it's motivated not so much - - -

DR SCHOTT (SW): There's about 20 per cent of our base.

DR MUNDY: So they're mainly motivated by a view about externalities from their water system - - -

DR SCHOTT (SW): That's right.

DR MUNDY: - - - rather than - - -

DR SCHOTT (SW): Rather than price.

DR MUNDY: So there's not a big cadre of people who'd be happy to be the first to go on to restrictions?

DR SCHOTT (SW): No.

DR MUNDY: Or be happy to - - -

DR SCHOTT (SW): Pay twice as much to get.

DR MUNDY: - - - pay more so they can keep the fruit trees going when it gets really bad or - - -

DR SCHOTT (SW): No. In fact, the behaviour around restrictions is very strongly in support and very community-based. Restrictions are very powerful in that people do stick to them and in fact dob people in that don't.

DR CRAIK: Did you have a major enforcement compliance project for your restrictions?

DR SCHOTT (SW): We had about forty people who also work as plumbing inspectors, but who worked as restriction enforcers while we had restrictions. We did fine some people for, basically, serial offences.

DR MUNDY: So most of the breaches were incidental; "Oops, the reticulation turned itself on at the wrong time," or something like that.

DR SCHOTT (SW): That's right.

DR CRAIK: Why do you think there is this extraordinary support for restrictions?

DR SCHOTT (SW): I don't know. People value water as a scarce resource, I think.

MR RAMSEY (SW): There is a public-good aspect to water supply: it's not just the water in the tap; there is an overall community health benefit, which is why systems were built in the first place, really. That is in the nature of a true public good. People still, I think, feel that way; that water is a natural right for everybody.

DR CRAIK: Do you do an analysis before you impose them; on the costs of restrictions, is that all public?

DR SCHOTT (SW): We have done work on the cost of restrictions and that is part of the Metropolitan Water Plan, information that is up on the web.

DR MUNDY: Just going back to this attitudinal survey, is it fairly consistent across income groups so there's no segmentation of attitudes around those who live in wealthy apartment buildings as opposed to those who live in suburban dwellings in Mt Druitt?

DR SCHOTT (SW): No, I could get the split-down on that, but it's not - - -

DR MUNDY: It hasn't leapt out at you.

DR SCHOTT (SW): No, it hasn't leapt out at us.

MR WILSON (SW): I think we covered it in the submission, but it was a surprising result when we found that some of the reduction during restrictions wasn't restricted activities it was just people - - -

MR RAMSEY (SW): It was about 40 per cent.

MR WILSON (SW): Yes, which just goes to the community-will aspect; people were saving water indoors because they thought it was the right thing to do.

DR CRAIK: Do you have a view about restrictions? As I understand, I think your restrictions were like most places, where there are restrictions about what you can and can't do, as opposed to saying, "Here's a volume of water. This is what we are aiming for." Is there scope to go to volumetric restriction as opposed to the activity restriction?

DR SCHOTT (SW): Under the Metro Water Plan we did have a usage target and the restrictions were based on activities to try to get us to that target, which happened.

DR CRAIK: But in future would you consider, for example, for the garden lovers, they might prefer to put it in the garden as opposed to using the washing machine 20 times and carting the water out or something?

DR SCHOTT (SW): Yes.

DR MUNDY: What is the problem? Metering and monitoring, I presume, and you don't know that they've breached until down the track.

DR SCHOTT (SW): There is no problem, really, about metering and usage, and that is pretty much the approach that the people in Brisbane took.

DR CRAIK: Yes, because they had a target, didn't they?

DR SCHOTT (SW): Yes.

DR CRAIK: And let people make their own choices about what they would want to use?

DR SCHOTT (SW): Yes, we could do that.

DR CRAIK: We know you are not great fans of scarcity pricing, but - - -

DR SCHOTT (SW): We're actually not against it, we just don't think it is going to work.

DR MUNDY: Because elasticity is so low.

DR SCHOTT (SW): Yes, because the elasticity is low.

DR CRAIK: Do you think that is particularly true now that the per capita volume has come down so much?

MR WILSON (SW): It also goes for water. Because there has been a shift in consumption - and we haven't seen a bounce back from restrictions - the capacity to manage droughts through reductions in demand, through any measure of scarcity pricing or continued water restrictions, is less. But it would certainly make the job harder for scarcity pricing if you already are off a much more efficient base.

MR RAMSEY (SW): And you run the risk of being pushed into the worst of both

worlds, because the price - - -

DR CRAIK: Into what, sorry?

MR RAMSEY (SW): You run the risk of being pushed into the worst of both worlds: the high price won't make it rain. So there is a point at which, if you pushed your price up, you restrict it, and it still hasn't rained, you are left with nothing but restrictions to back it up.

DR CRAIK: But the economists suggest that low users wouldn't be worse off and the average cost might be less than now.

MR RAMSEY (SW): Because of deferral of supply increments? It's a question of whether people are happy to die of thirst to see their children have a drink of water.

DR CRAIK: It's a fairly stark contrast.

MR RAMSEY (SW): It's because you can't predict when it will rain. It's an inherently unpredictable process. If you just rely on price, if you know that you can call forth additional supply quickly by having a much higher price, then it has a role. But if you can't, then you may be left in a situation where $50 a kilolitre or $150 a kilolitre, and it still doesn't rain, what do you do then?

DR CRAIK: But presumably, in the best of available worlds, if you were taking some kind of real options approach, you would tie price increases to some kind of options; looking forward, and presumably you wouldn't get yourself into that situation where you are waiting for it to rain?

DR SCHOTT (SW): Yes. Though it does take time to get in place, that's all.

MR RAMSEY (SW): Other than desalination, supply increments don't give you any water, they just give you a way to catch water if it rains, so you have to really build them when it is raining and then hope the drought comes along.

DR CRAIK: Except that the number of new dams, the number of new augmentations, have been based on increasing rainfall in recent years, there's not very many.

MR RAMSEY (SW): No, there's been a focus on desal.

DR CRAIK: That's right, and presumably you could build that sort of options plan and tie it with your price.

MR RAMSEY (SW): The economics of the total desal water are quite different,

because you do have guaranteed supply. Provided the price is equal to the margin of cost, there is no need to go to a scarcity price, because there's no scarcity.

MR WILSON (SW): I think that whole chain of logic, that having scarcity prices during drought can have a feedback onto your augmentation and have lower prices overall is something that still needs to be - - -

DR CRAIK: Tested?

MR WILSON (SW): - - - really worked through, and can that be made to work. Real options are talked about, but what would it mean and how would it work? One of the results from the elasticity study is that in the long run the elasticity took two years to work through the system. So it's not as surgical an instrument, pricing, as might be expected. To get the full effect, people have got to change behaviour and put in water efficiency devices that take time to work through.

MR RAMSEY (SW): Restrictions have virtually immediate effect, that can be policed. Pricing will be a lag effect, particularly in quarterly billing cycles.

MR WILSON (SW): Like monetary policy, if dams fill just as your price is then having its major effect, it's - - -

DR MUNDY: So are you suggesting there are long and variable lags?

MR WILSON (SW): Yes, and the short-run elasticities, I don't think we are sure what they are. The long run isn't 10 years; it's not three months, six months, it's a few billing cycles.

MR RAMSEY (SW): You would, presumably, have to give a guaranteed volume for health and welfare reasons at some reasonable price before you charge the higher price. So your ability to control volume is not - - -

DR CRAIK: Has anyone contemplated a trial of any of this - - -

MR RAMSEY (SW): We contemplated an attempt to improve our elasticity study before we found a better way of doing it or another way of doing it; of metering, having smart meters, and having a variable price, to see what the effect would be. We haven't proceeded with that, because we found we had enough data in our system from recent price rises naturally to do a study.

DR CRAIK: Even with restrictions in place? Doesn't that complicate - - -

MR WILSON (SW): We think so. We haven't ruled out the prospect for doing a further longitudinal study, but we haven't taken it forward as yet.

DR CRAIK: Are you aware of anyone having done anything like that?

DR SCHOTT (SW): No.

DR CRAIK: It just seems to me that one or two trials without restrictions, in limited areas, would actually be quite useful to inform this debate.

MR WILSON (SW): Certainly.

MR RAMSEY (SW): We thought the ACT would be a really good place to start, it's a nice, confined conurbation with discrete supply so - - -

DR MUNDY: We've all got tanks now.

MR WILSON (SW): I'm sure they have a view.

DR CRAIK: In Melbourne there are three retail distribution outlets. They speak quite highly about competition by comparison. Sydney is also a large-sized area. Do you have a view about that?

DR SCHOTT (SW): It has been looked at a few times. The difficulty is the geography. If you were going to split up Sydney's area, the obvious split-off would be Illawarra, which we service. How you'd actually define Illawarra in area terms you'd need to have a close look at. There have been some studies, about the time of corporatisation, of splitting Sydney more or less down the middle of the harbour and the Parramatta River.

That always sort of foundered because the network is more like a spider web, and you lose quite a lot of network efficiency doing that. It would be possible, but that hasn't really ever got anywhere. The Illawarra is not really big enough. If they split off, their prices would probably rise, largely because their wastewater treatment is very high quality. We would probably need another 30,000 or so people down there for it to be doable, but it's coming I think.

DR MUNDY: So the real issue is the ability to isolate subsystems?

DR SCHOTT (SW): Yes.

DR MUNDY: You can isolate the Illawarra without much - - -

DR SCHOTT (SW): Yes, it's pretty much a stand-alone system.

DR MUNDY: So what you're saying is that the system in metropolitan Sydney as a

whole may be relatively more connected than the system in Melbourne?

DR SCHOTT (SW): Yes, and the geography is different. Melbourne is flatter. Sydney has got a lot of hills, it's sort of in a basin; you find the way the network is put together is just not so amenable to carve up.

DR CRAIK: It's not easily splittable.

DR SCHOTT (SW): Just on the Melbourne experiences, their retail split certainly did lead to decreases in costs initially, and it has pretty much steadied; there was a big improvement, and then it has been flatlining more.

DR CRAIK: They do say that there's a real benefit though in fostering competitive innovation.

DR SCHOTT (SW): There is, yes.

DR MUNDY: Yes, but, I mean, there's always the identification problem that corporatisation is likely to cause a reduction in costs, and whether break-up causes more or not is hard to get - - -

DR SCHOTT (SW): Yes, it certainly did have a positive impact in Melbourne, but it went with corporatisation, pretty much so.

DR MUNDY: A bit hard to say what the full impact - - -

DR SCHOTT (SW): Yes, and the corporatisation in Sydney led to great improvements too. It's just a different method. On the comparisons across the utilities, there's no huge differences really.

DR CRAIK: No. I don't suppose you would, but would you see there's any benefits in any splitting up of Sydney Water in any way, vertically?

DR SCHOTT (SW): We had a look at taking retail out - we try to run it as a least cost operation rather than one that's making margins - but with such a small part of our operations that we can't see why the British think that taking retail out is going to make it more competitive. I think for us to be more efficient we could do some more outsourcing of planned maintenance, that's the main thing. As the cost of carbon comes in or power prices go up, we'll inexorably be generating more energy and probably getting more high-value nutrient removal than we currently do. So I think the big efficiencies in the future will be in sewerage treatment.

DR MUNDY: Just one final question. You alluded to that there doesn't appear to be any great difference between efficiency levels in, say, the Victorian businesses,

the metropolitan businesses, and yours. Is this really suggesting that there's a pretty wide range of efficient scale and it's highly geographically determinated?

DR SCHOTT (SW): One of the big determinators of cost is moving water or wastewater around, and if you're in a hilly city your costs are going to be greater. The question that you were asking actually about scale was an interesting one, because I think water utilities are really driven more by hills than almost anything else. Depends. You can be pretty efficient if you've got a dam and you're gravity-feeding down to your accommodation; and then if you can gravity-feed your wastewater away somewhere, you're in a very efficient space.

MR RAMSEY (SW): The other cost is the treatment of effluent, to the extent to which you've got to treat your - - -

DR MUNDY: Those costs are the same pretty much.

DR SCHOTT (SW): Pretty much.

DR CRAIK: Yes. Just one final question before you go. Are there any big areas for urban water reform? What would you say is where the biggest gains are to be made?

DR SCHOTT (SW): Independent regulation.

DR MUNDY: What are we getting out of that, Kerry? I mean, is it getting the politics out of decision-making or is it stopping utilities abusing traditional monopoly power or - - -

DR SCHOTT (SW): It does both. I think the regulators have pretty much stopped the monopoly power abuse, but what they haven't stopped in all jurisdictions is politicians telling them not to put prices up. So in Queensland you get huge infrastructure spends without anybody working out how to pay for it, and it not being reflected yet in water prices, and now it's starting to be reflected and everyone is going, "Hey, what's happening here?" If your price rises too just before an election, the odds are that you're going to have a minister saying, "You can't put your prices up by that much."

DR CRAIK: Like Tasmania. Thanks very much, and thanks to all three of you for coming down. Thanks for your submission. We'll look forward to seeing the results of the work that you've promised us.

MR WILSON (SW): It's not me who is doing it, so it's easy to promise, but Barry Abrams, who is not unknown to the Productivity Commission, would be happy to run a workshop early in the new year.

DR CRAIK: That would be great, thank you. Can I invite everyone for a cup of tea down there. We'll resume at 10.45 with Infrastructure Australia. Thank you.

DR CRAIK: Thanks, Rory. When you're ready, if you could say your name and your organisation for the record, and if you've got a brief opening statement we'd be pleased to hear it. Thank you.

MR BRENNAN (IA): Thanks very much, Wendy. My name is Rory Brennan from Infrastructure Australia. I'd like to talk a little bit today about two of the reviews that Infrastructure Australia has conducted: the first into urban water security, particularly water security for major cities in Australia; the second into regional towns' water quality and security.

Just to go back a bit, when Infrastructure Australia was set up in 2008 we were asked to look into the economic infrastructure sectors of water, energy, communications and transport. Our first task was to conduct an infrastructure audit to determine where the most significant gaps were in those four sectors, to identify why the gaps were there and how they might be removed. In the water sector the audit identified concerns with the - particularly with the planning for major cities' water security; secondly, concerns about the quality and - particularly the quality - health-related aspects of water in regional towns right across Australia and also their planning and provision for security. So we completed both those reviews. We have reports. The first report into urban water security is on our web site. It has been submitted to the inquiry. The second report will be released very shortly - into regional towns' water quality - and has also been submitted to the inquiry.

Both reviews - our remit is to look at reform and investment in infrastructure, so how reform might help solve gaps in infrastructure, and how - given at the time the Commonwealth government's interest in providing some assistance to bridging infrastructure gaps - into what investment might be warranted. I suppose our view in the water sector is that we think that there is little need for Commonwealth direct investment in infrastructure. We'd much prefer to see a situation similar perhaps to the energy sector where the bulk of reliance is on customer charges to provide - and regulated markets and perhaps even unregulated markets to provide the necessary infrastructure and water quality and security that customers should be able to expect.

So both reports are focused on reform. In the major cities the focus of the reports' recommendations are to accelerate progress on principles that are already agreed, particularly around pricing, but where there has been quite a wide variation in terms of the speed at which progress is being made. It also pushes the idea of independent planning for water security, so there's a few options proposed in terms of how that might work institutionally, but the report pushes - its preference would be for institutionally independent planning authorities for the lookout for water security.

There are a few other areas where it pushes ideas for reform which aren't yet agreed generally, that is, competition in urban bulk supply and also providing some

form of consumer choice in terms of levels of reliability that they might want to receive and pay for. So that there might some sort of distinction in pricing between certain levels of reliability. Behind this is the recognition of the economic drag that water restrictions do place on the community.

The regional towns' water quality review identified, first of all, there are some very different institutional arrangements around Australia. We've got two states and two territories that have a statewide water authority, we have New South Wales and Queensland where we have a large number of local government controlled water utilities outside the major cities. It did identify that water quality reporting is very patchy, in general, for regional towns, but the report did take the view that notwithstanding the paucity of quality reporting the evidence that was available did indicate that there is a problem that warrants attention. It's not a uniform problem. We would propose that there are areas that are basically higher risk than other areas, and those are the areas that should receive the priority attention.

Again, the principle here is that we would expect that water use charges should recover the cost of provision of water quality and security; we recognise that for the existing arrangements, institutional arrangements, that would be very difficult because of the small customer base, particularly in New South Wales and Queensland. We also recognise that even where there has been reform along the lines perhaps of Victoria and Tasmania where we've got consolidation of regional water authorities that even in Victoria there are instances where water utilities that are financially sustainable still don't always meet water quality requirements; and the view that financial sustainability isn't the only solution, that there also needs to be incentives to meet drinking water guidelines, particularly the health-related. So this is the idea that there needs to be a parallel stream in terms of incentives and institutional arrangements to ensure that consumers get the water quality that they should be able to expect.

Pricing water. In many regional towns to recover the full cost is currently difficult to achieve, particularly because of community and local government sensitivity to price increases. But the review found that many regional water utilities are not charging anything anywhere near cost-reflective prices and many of them aren't even charging the sorts of prices that are obtained in major cities where you would expect there would be economies of scale. We believe that without pricing reform many of those water utilities are never going to achieve financial sustainability.

We found that water utilities in many towns really struggled to comply with drinking water guidelines for a range of reasons: fewer resources, lower availability of technical knowledge, competition for the technical knowledge that exists in regional areas, inadequate infrastructure and poor processes for operation and maintenance of equipment. But I think the key factor was particularly the lack of

adequately skilled people to operate - and systems to operate and maintain water systems. So the report pushes for improved training; wider compliance with drinking water guidelines, that that provides significant benefits. We recognise that there is - it's a lot more complex in regional areas to achieve water security than it is for many - particularly coastal towns. There's not necessarily a great deal - many other alternative options in terms of supply. But we also view that there also needs to be coordination, particularly on catchment lines, to ensure that best use is made of the available water source.

Particularly in New South Wales and Queensland we've got some water planning arrangements which are based on catchment levels but typically the utilities are local government boundary based. We'd have the view that if the water governance arrangements, particularly in New South Wales and Queensland, were on a catchment base then significant benefits could be achieved.

In terms of the key recommendations coming out of that report, it pushes for mandating compliance with the Drinking Water Guidelines and, again, targeting where the risks are highest, and also recognising that there may be some areas, particularly because of a cost factors, that full compliance with Drinking Water Guidelines may not be practical, particularly the aesthetic guidelines. So health guidelines, we think, should be promoted, but there may be room for regulatory exceptions along some, perhaps, aesthetic guidelines, to provide for, at least in the interim, some sort of relaxation of the cost impact that might impose.

We push for a best practice management framework for all the urban water utilities, so that we have a framework that these utilities could operate under and we would have consistent, particularly, definitions, consistent approaches to climate change planning, scenario testing, emergency response, and also the forward-looking planning indicators that perhaps could be developed. Noting that to a certain extent a lot of the problem that Australian water utilities have got into is as a result of a backward-looking planning framework that looks at past rainfall and inflows, which don't reflect, necessarily, the protracted drought and the emergence of climate change impacts. It pushes for improved water pricing, but acknowledges that there are equity and political issues that will inevitably arise, and so it pushes for further investigation into the structures available to enable those sorts of reforms to happen in relevant areas.

A strong focus on developing a highly skilled workforce. But I think, particularly in New South Wales and Queensland, that is unlikely to be a sustainable initiative unless we have institutional reform, which the report proposes the preferred model would be for catchment based regional water corporations. So not saying that there is a preferred model, but we do have models in Victoria whereby we have had state-owned water corporations, and in Tasmania we have had a combination of state and local government owned water corporations that have been amalgamated and

they seem to provide at least a couple of options. It doesn't push for statewide water utilities in Queensland and New South Wales; the view is that that model seems to work reasonably well in Western Australia, South Australia, and the Northern Territory, which have a different demographic and geographic spread of population. So it is not quite sure that the same economies would necessarily flow in New South Wales and Queensland, with quite a different population base.

That is a bit of a summary of where we are going. Although notwithstanding my opening statement, that we don't believe that there is a specific role in terms of the Commonwealth participation in the water sectors, I suppose, particularly in the regional towns, we do believe that there could be scope for the Commonwealth to participate by way of incentives for progress on reforms, similar to a National Partnership payment type of model. Particularly in New South Wales, the reforms that we are proposing are likely to be highly controversial. It will involve quite a significant change to local government business operations. Quite often the water utility operations are a significant part of the local government revenue base and also there are likely to be impacts in terms of economies of scope on the organisations within councils. Notwithstanding that, we think that is a preferred model and there are enough examples of where the water utility function has been taken away from local government and local government is still a viable operation.

In terms of our approach to promoting the reforms that are in our reports, as a principle we want to participate in building a compelling case for reform. We accept that some of our preferred reforms may not turn out to be compelling enough to gain wide acceptance. We also want to participate in building a constituency that supports implementation of the reforms that are compelling. As I said, we accept that there may be, particularly in regional areas, a role for the Commonwealth to step in, in terms of incentives to promote reform. We see this inquiry and the review of the National Water Initiative next year as important elements that will help enable us to pursue both those principles.

DR CRAIK: Thanks very much, Rory. At the end you suggested that in response to these reports you are trying to develop constituencies, and your website suggests you are developing a plan of action to respond to the Urban Water findings and recommendations. How is it all going? What progress are you making?

MR BRENNAN (IA): We have received a number of submissions on our Urban Water Security. Mostly supportive, which is good. I suppose, our view, coming out of the Urban Water review, was that there were already areas which were agreed, particularly in terms of pricing principles and movement towards cost-reflective pricing. There were areas that were not yet agreed, particularly around the ideas of bulk entitlements for large users and perhaps for bulk suppliers, third-party access regimes are not in place right across Australia, and the idea of customers being able to select a level of reliability.

One of the other areas that came up in that was the exploration of a role for scarcity pricing and I suppose we were intending to launch pretty quickly into some further exploration of how those sorts of things might work, and then the inquiry was announced and the review of the National Water Initiative became more obvious. Our view is that, rather than rush ahead, we would like to get a view of, perhaps in the wider debate, where our efforts might best be placed in terms of exploring how some of those reforms that aren't yet agreed might be taken forward. So to a certain extent the roundtable out in Melbourne that I attended was quite instructive there, and the subsequent CEDA conference, I think, a few days later. There seems to be quite a bit of consistent events, quite a level of consistency in where reform could go, and we would like to think that once we get a better feel for where we could add to the debate then we will pursue that.

DR CRAIK: Thanks.

DR MUNDY: You made an observation that reform has already occurred in Victoria and Tasmania. My recollection is that a long time ago local councils provided water services in non-metropolitan Western Australia; a long time ago, late 80s, early 90s. In our proposal the Commonwealth might provide some incentives for New South Wales and Queensland to do what other jurisdictions, and particularly Tasmania most recently, have done without any Commonwealth assistance at all. Do you think that is a problem?

MR BRENNAN (IA): It's an obvious issue.

DR MUNDY: I guess a better question is, why should the Commonwealth stump up for New South Wales and Queensland when the other states have done it off their own bat.

MR BRENNAN (IA): I think there are instances where the Commonwealth has made some interesting decisions in terms of supporting the water sector. Most recently, I think, in Adelaide, where it contributed to the cost to double the size of their desal plant. That is not a model which we would think is the way to go. But, yes, I acknowledge there are issues of equity, in terms of how fair is it to provide incentives for laggard states to progress when others haven't, and I think that is something that needs to be explored in terms of how you might justify and structure those sorts of incentives.

DR MUNDY: Because I guess it goes to the more general question of grants based assistance in the water sector more generally when, on one hand, people are saying this stuff has got to be fully cost recovered, and then on another hand, like the example you had with Adelaide, large amounts of grant money are being put on the table essentially because of a view that prices would otherwise be too high and if

South Australia, why not South-East Queensland? So do you think there's a need for a framework around how the Commonwealth provides cash into the water sector, a transparent framework?

MR BRENNAN (IA): Definitely, yes. Neither of our reports have that framework. We hadn't proposed a framework. It's been floated in the regional towns - because there is a recognition both politically in terms of the recent federal election where there was a lot of sensitivity around regional issues, a new department, that for any changes or reforms to be adopted that have impact in regional Australia, there was going to be a significant amount of political interest. There's also a recognition that there probably will be some structural adjustment costs, so rather than perhaps investment in water infrastructure, there might be incentives that are focused elsewhere to help promote adoption for that reform.

DR CRAIK: Do you think Commonwealth money would be enough to help or encourage reform in New South Wales or Queensland?

MR BRENNAN (IA): The New South Wales government has conducted a review that looked at the institutional arrangements for water and hasn't released it. I suspect that it's not going to pursue the sorts of reform that we're proposing, but I think it probably would push for some amount of reform. I'm not quite sure just what level of incentives would be needed to get reform. We've got the New South Wales local government based water utility saying they are already progressing down this way. They like to cite the Lower Macquarie Water Alliance, and after having spoken with the New South Wales Local Government Association, their preferred model would be for a collaborative rather than a corporate-type - - -

DR CRAIK: What they describe as the binding alliance?

MR BRENNAN (IA): Yes.

DR CRAIK: Do you support that model?

MR BRENNAN (IA): Our report suggests that there's already examples where this sort of collaboration has happened and there's also water-sharing plans that operate across New South Wales, so we would see that that is an indication that there is some appetite to pursue the principles. We would see alliances as probably an interim step because we're not confident that even a binding alliance model will necessarily give you the sorts of rigour that we think should be applied, particularly in terms of independently determined prices. I think the position in the Queensland government's submission, the local government submission to you, is that they would see that water prices be the sole province of local government. So political interference in water pricing will still be there in the alliance model.

DR CRAIK: Do you see a problem, say, for example, in western New South Wales, even if IA's catchment based approach were introduced, where the population is so sparse, there's not a lot of people in that part of the world, is it possible that cost recovery still would just make the prices so high for people in that part of the world, and given often the nature of the socioeconomic status of a lot of the people perhaps in that part of the world that it would be particularly difficult?

MR BRENNAN (IA): I'm sure there are locations where the pure economic model just wouldn't work and I think the Murray-Darling Basin Plan has run into similar sorts of situations where there will be costs and there will be significant costs and if it's to achieve an economically pure outcome, then inevitably the result would be dislocation for the people involved. I think the government needs to take a view, both state, local and government, as to what it's going to do to enable those sorts of communities to be sustainable.

DR CRAIK: Okay. Are you aware if there any similar sorts of issues when Victoria and Tasmania went through their amalgamation?

MR BRENNAN (IA): I'm not so sure about Victoria. I've been in discussions with Tasmania recently, quite separate from the regional towns water quality inquiry. They have a proposal for some financial support for their capital program over the next 10 years. They've got a $1 billion capital program. At the moment there's a parliamentary inquiry into the reforms that have been introduced, the rationalisation of water utilities into three. I am assured by Tasmanian government officials that the terms of reference means that that's not going to enable a reversal of the reforms that have taken place, but particularly the potential for cost increases are very sensitive, such that the government has put orders in place to limit the rate of price increases. But I think there is some recognition in Tasmania and Victoria that these reforms are needed, particularly in Tasmania where there's widespread boil water alerts because of the water quality that obtains down there and that something needs to happen. The water corporations down there understand that the price increases that they will be able to put in place will enable a significant change to the performance and the quality of the infrastructure they have in place and that they will over time get to a situation where they are financially sustainable. So, yes, there will be implementation issues, that's for sure, and there will be a lot of community and political resistance.

DR CRAIK: Do you have a view or does IA have a view about - I mean, in Tasmania, their local government-owned water corporations, the three water corporations in Victoria, they're state-owned water corporations, do you have a view about which is preferable, if one is?

MR BRENNAN (IA): We have said two models. I think part of the sensitivity in local government is the removal of cash flow that comes from their water utilities,

whether it's a sustainable one or not. It still is a cash flow and it's typically quite a significant part of their revenue base. So local government shareholdings in the regional water corporations does provide some attraction in terms of giving them access to dividends that might flow from the operations, rather than having it all go back to the state government as it does in Victoria. We didn't have a preference for either model.

DR CRAIK: Okay.

DR MUNDY: Cash flow isn't of itself a universal good.

MR BRENNAN (IA): No.

DR MUNDY: We know that a lot of water utilities in regional towns basically aren't recovering their costs which means that other council activities - the rates basically presumably subsidising that and the revenues have therefore been diverted from parks, cleaning up the rubbish and social welfare services. I just thought that if I was a councillor, concerned about the finances of my council, I might be happy to be rid of something that was draining me of cash, unless I thought I would become a more important councillor because the cash flow of a council was bigger.

MR BRENNAN (IA): Yes, as I understand it, as well as the rate revenue, there is also for some local government areas a reasonably significant inflow of state government funds, be it through grant or community service obligation payment, so there is a couple of elements to the cash flow, I suppose.

DR MUNDY: These seem to me to be arguments about councillors rather than public finance. AECOM makes the observation about funds being transferred from utilities to governments. Do you know precisely who AECOM is talking about there?

MR BRENNAN (IA): Not specifically. There are apparently examples where regional water utilities have transferred dividends, but - - -

DR CRAIK: New South Wales.

DR MUNDY: But the payment of dividends is a normal - I mean if the regulator is setting a return on equity then presumably a dividend will be paid to the shareholder. So the fact that a dividend is being paid is neither here nor there. So presumably there's a concern that the dividends are excessive?

MR BRENNAN (IA): Well, there's - yes, I think the idea that you've got - at the same time as you've got failure to meet drinking water guidelines and failure to provide for security of supply, you've got dividends flowing out.

DR MUNDY: I'm just tyring to understand the situation here. We've got an organisation that's subject to some sort of economic regulation because all the ones that are paying dividends I think are subject to economic regulation. So the regulator is allowing a level of return, so it facilitates a dividend, but people aren't investing in an appropriate way to meet their other licence requirements; they might be regulatory requirements but licence requirements in the broad. Surely this is standing out fairly apparently?

DR CRAIK: Where is it occurring, I think is the question.

DR MUNDY: Yes, I'd be interested if you could go back to AECOM and ask who this is, because - - -

MR BRENNAN (IA): Yes, I'll do that.

DR CRAIK: Because I don't think it's New South Wales.

DR MUNDY: Because if this is happening this is a ringing indictment of whatever independent regulator is on the job. We're hearing an awful lot from lots of people about the benefits of independent economic regulators and if this is identifiable then it's a clear regulatory failure.

MR BRENNAN (IA): Yes.

DR MUNDY: It's something that we need to have a think about, about how we should make recommendations about strengthening that regulatory framework to prevent that sort of thing from happening.

DR CRAIK: There may not be independent regulation in the cases where that's happening.

DR MUNDY: Well, it might be, but - - -

DR CRAIK: I suspect.

DR MUNDY: But I'm not aware of anyone who is paying dividends who isn't subject to economic regulation, except perhaps the Water Corporation of Western Australia, where the regulatory framework is different. I'll just come to that question. I mean you seem to favour a catchment-based sort of - part of the interest in this inquiry, I think it's an important issue, is how might we, if we're talking about structural organisational reform, if you like, how do we go about thinking about how we draw the boundaries? The catchment one seems to me to be a logical one. It seems to work in Victoria because it's a reasonably compact place and you can chop

it to pieces.

You made reference to WA. I'm pretty certain that Karratha is not in the same catchment as Albany. Do you think there might be a case of having a look at these big statewide jurisdictions and say maybe there is a more efficient way of chopping up? Maybe remove the metropolitan area, major regional centres - although South Australia and WA don't have them in any large sense.

MR BRENNAN (IA): Yes. I suppose it has been pointed out that, for example, in Western Australia that the postage-stamp pricing across the whole state is a bit of a barrier in terms of being able to send the right signals, particularly to remote areas about use of water, and also to provide funding in order to get upgrades of both security and quality. I was in Karratha when the premier made the announcement about the desal plant to be put up in the Pilbara; so it was interesting they seemed to have got over that problem just in the one place. But I must admit the review didn't go into a lot of detail in terms of South Australia, Western Australia, Northern Territory in terms of the efficiency of that statewide model and the components within it.

DR CRAIK: Was that because you didn't want them to or didn't ask them to, or was it the way - - -

MR BRENNAN (IA): There was a bit of resistance from Western Australia to provide information to our review.

DR CRAIK: What about South Australia and - - -

MR BRENNAN (IA): South Australia was better and Northern Territory were more forthcoming.

DR CRAIK: So does IA have a view about - - -

MR BRENNAN (IA): I suppose our view for those organisations would be that there is scope for cost reflecting - that postage-stamp pricing across a state like Western Australia or South Australia is probably not particularly efficient. We've had submissions to us seeking funding support, and the basis for the funding support is because postage-stamp pricing doesn't allow them to recover costs.

DR CRAIK: Recover their costs, yes.

MR BRENNAN (IA): To make investment in particular areas. Now, there's a fairly simple and straightforward answer to that, and that is to change the basis of pricing to reflect costs more.

DR MUNDY: You can sort of see if you get your jurisdictional boundary right then postage-stamp pricing might fall in upon itself and cease to be a problem because there's enough likeness.

MR BRENNAN (IA): Yes.

DR MUNDY: You mentioned the Pilbara, and Karratha is a unique and funny sort of place, but the interesting thing about Karratha of course is the very strong industrial need for water for the resources sector. There's a similar scheme - it's a similar scheme of arrangements in Gladstone to use your lower quality water for industrial purposes. Is that something that IA has given some thought to, about the interaction of particular industrial needs in rural towns as opposed to say the more general - you know, somewhere like Coffs Harbour, for example?

MR BRENNAN (IA): Yes, I think Pilbara and the Kimberley and mid-west, particularly in Western Australia as well as the coal mining regions in Queensland, so Mount Isa, are special cases, they involve not incremental growth in demand for water supplies. They've also, particularly in Western Australia, been subject to state agreements which the state considers it binding on them, I'm not quite sure that some of the miners consider they're so binding, but they have provided quite generous allocations of water for mining-type industrial operations, so dust suppression and that sort of thing; typically from aquifers, I think, around the Pilbara. We've got a situation where those agreements are in place. You've got massively growing investment in that area and people are of the view if there is a problem then they will just build a desal plant for self-supply. If there's a problem with energy supply they build their generator, they build a transmission line. If they want a train line, they build a train line, and away they go.

So those areas present a particular problem. We have got a proposal before us from the Western Australia government to support the development of Pilbara Cities. That's one of the reasons why we were in the Pilbara, to get an idea of just what the situation was. It's far from simple. Particularly the competitive pressures amongst miners in those areas almost proscribe a rational market outcome in terms of supplying the needs. So you've got this almost war-type footing in terms of, "I will build my infrastructure," notwithstanding that it might be completely rational in a costs sense to perhaps share that with a competitor, "I'll never do that".

DR CRAIK: So the population that services their development, mine or whatever it might be, that's left to the government to provide.

MR BRENNAN (IA): Yes. At the moment, for example, in Karratha power is bought from I think Rio Tinto, so from the local generation there. We've got a proposal before us for a power distribution network around the Pilbara to have a more rational approach to generation and distribution and all those sorts of costs. It

met with total resistance from the big miners there. So how government gets in there and does something useful is an issue. Western Australia government has a big priority for development of the Pilbara and Port Hedland and Karratha in particular. We'd like to see that happen in a rational way.

DR CRAIK: Is the WA government attempting to do that?

MR BRENNAN (IA): Yes. So they've got what they call the Pilbara Development Authority, which is aiming to overcome some of the huge costs pressures that exist in that area in terms of servicing the needs of the people who work there and live there and the miners. So you've got the situation where to buy a block of serviced land is $200,000. To build a house is $600,000 which is three times more than it is in Perth. As soon as it's built it sells for $1.2 to $1.5 million and rents for $3000 a week. So how do you get people to work in the supermarkets orto service equipment? Unless they're in a mine, typically they're not getting mining wages so how do they afford to do that?

Energy and water are prime constraints in terms of land release in those area and even just getting - even if the government did want to build a desal plant, it's going to have to face up to the face that it's going to be enormously expensive to do it there and they have acknowledged that the cost relativity between building a desal and one in Perth is three or four times - - -

DR MUNDY: Everything is expensive in Pilbara and Kimberley. Just coming back, you made an observation about the logical cost economics gets run over the top of by competitive pressures essentially. Would there be scope for a water access law, something like the access law in New South Wales, for example, to break up that sort of problem? Not Part IIIA but something that did the job. Would that help or do you think that would just mean that they wouldn't build it at all?

MR BRENNAN (IA): I'm not sure, we haven't really looked into that enough. You've already got the situation where you've got notionally private infrastructure and contestability for access to that and it seems that the preferred approach is to - well, as soon as somebody wants to use your infrastructure then you take it to court and drag it out over many years.

DR MUNDY: That may be because the law is badly drafted.

DR CRAIK: One final question, we're almost out of time. The urban report, given how the urban water sectors are generally different in each state, does IA have a view about which jurisdiction has performed better in relation to water reform or has the most efficient urban structure?

MR BRENNAN (IA): This is not necessarily in water utilities but the view that

New South Wales has probably progressed - maybe surprisingly - quite well and not always because of design, we've had separation of bulk supply and treatment and distribution and waste water treatment. We've got independently determined pricing there, we've got an access regime for water and waste water infrastructure. We've got cost-reflective pricing, that's been pushed through. In terms of the institutional model, we haven't really looked at that in terms of national versus statewide or even the Victorian set-up of a number of retail distribution companies within the city.

I know Sydney Water was set up on a regional basis going back 10 or so years and then decided to move away from that. It wasn't corporately or structurally - it was regional light, if you like, without a lot of the costs separation that you would think might happen and therefore you'd get competition between the regions and it moved away from that. It was difficult to demonstrate any gains that were coming from that. To a certain extent it was set up so that you couldn't see any gains and I'm not quite sure whether the Victorian model could provide a better model in Sydney.

DR CRAIK: Okay. Thank you. Thanks very much for your submission and thanks very much for the reports. It was very helpful.

MR BRENNAN (IA): Thank you.

DR CRAIK: The next is the Water Services Association of Australia. Ross, if the three of you could state your names and positions for the record and then if you have a brief opening statement.

MR YOUNG (WSAA) : Ross Young, I'm the executive director of the Water Services Association of Australia.

MR FENTON: Craig Fenton from PricewaterhouseCoopers and here in our capacity, as we assisted with the WSAA submission.

MR LOVELL (WSAA): Adam Lovell, manager science and sustainability at Water Services Association of Australia.

DR CRAIK: Thank you.

MR YOUNG (WSAA) : Thanks, Wendy. I was in central Victoria where there were was about 150 millimetres of rain between Friday night and Saturday night which resulted in all of the reservoirs on the Coliban system overflowing and those reservoirs had been empty - well, with the exception of the Lauriston Reservoir - for pretty much over a decade. It reminded me that rainfall is the X factor for the urban water industry and there are few other industries that operate in such a climate of uncertainty as the water industry does. Imagine Qantas having the uncertainty about jet fuel like we do with water or a power plant having the uncertainty about the unavailability of coal, so the uncertainty is something that's quite unique to water.

The other thing I just want to say at the outset and it's come up here time and time again this morning, that there are elements of water that are quite peculiar that produce bizarre community attitudes, and that it all relates back to the special place people have for water. Now, that doesn't mean you can't do anything to reform and improve water but it does mean that there's an added layer of complexity to deal with when you're dealing with water compared to electrons from a power station or gas molecules.

In my brief overview, just a couple of points. Firstly, the industry I don't think anyone could claim is a train crash or is even broken in any way and I think urban Australians, particularly from the capital cities, are serviced with the world's best water and waste water services. You've just got to witness the response to the clouds disappearing and the drying climate when in the six-year period from 2005-2006 to 2011-2010 some $30 billion has been spent by the industry just on new water sources. Now, this is not renewals for the water industry, this doesn't take into account any waste water expenditure, that's just purely on new sources of water and that really is a down payment on adaptation to climate change.

One of the things I would like to say is I think the strong nature and the ability

of the industry to respond in such a way goes back to the 1994 COAG reform agenda and it's because of that 1994 agenda putting us on such a strong footing that we're very supportive of the Productivity Commission inquiry into urban water. It's also true that we face a number of challenges going forward, such as complex supply systems with desalination and recycled water which all have to be optimised from an energy and a carbon sense; the smart metering is coming through; intelligent networks; cities of the future mean that we have to have more sustainable cities and water is a critical factor in determining the liveability of our cities. You've only got to look back at how terrible our cities looked in those dry periods half a dozen or so years ago.

I think one of the other things we probably haven't done a good enough job as an industry is really selling the virtues of desalination. Believe or not, desalination is largely unloved for a variety of reasons, even though people who love recycled water that's essentially the same technology. I think we've got to start conveying desalination as being the insurance policy against those very, very extreme years and the fact that we can't afford to have cities running out of water.

There are just two quick points before I run through a couple of proposals. The Australian urban water industry is renowned internationally for its great work and it really leads the world in areas such as adaptation to climate change, water conservation plans, leakage, understanding the social side of water, just to mention a few. The second general point was that I'm often perplexed about why waste water is hardly ever mentioned by policy players, particularly here in Canberra, and it's sort of the poor cousin of the water industry, yet the waste water component of a utility consumes probably more than 50 per cent of the costs. As you have been told this morning, we are moving into an era where we are able to generate green electrons from our waste water systems, and sanitation systems are the basis of cities growing to the size they are today. Finally, integrated water management is the way forward. The basis of recycled water is actually sewerage and I think we neglect the waste water system at our peril, both as individuals and also as society, because it really is an important area.

We didn't attempt to answer or address your 67 questions individually, but we broke it up into about five areas and I just want to very, very quickly go through some of the key areas. Firstly, we would like to see a removal of policy bans outright and make sure that when we are selecting our diverse portfolio of water supply sources, that everything is put on the table; everything is evaluated according to its merits, without being not even put on the table in the first place.

There are three areas in particular where there is still resistance; the concept of rural-urban water trading and I think that the industry could have saved itself a lot of money in building new infrastructure if it had access to the water markets from the rural areas over the last 10 years. "No-one shall ever drink recycled water" is another

policy plan that seems to be alive and well, which has resulted in some stranded assets in certain states. The final one is "No more dams". It is true that dams are highly variable, particularly in context of climate change, but they are low carbon source of water and they can produce very cheap water in the right place. So rather than saying, "No more dams," put them on the table and have them generally evaluated. I think there was an example over the weekend where the Tillegra Dam up at Newcastle has been ruled out.

The second point under our management and planning was a reform of local government management. I am not going to go into that, because I think Rory has done a very good job at articulating that. So congratulations on that, Rory, it saved me a bit of time and I'm in accord of your line. But I think the other thing is, as you would be aware, that across Australia institutional arrangements for planning vary quite considerably. But I think there is one common factor of these planning arrangements, in that the state governments don't have the planning resources to ensure we do have really high-quality water resource plans around Australia. I come from the view that good planning is the essence of prudent water resource management, because we are dealing with long-lived assets, we are dealing with expensive assets, and of course we are making those decisions in uncertainty.

The next area we looked at was water pricing and consumption. The first point to make here is that WSAA does not support ongoing water restrictions; we see water restrictions as a lever for emergency situations in those dry times and outside of that, providing people are paying the long run marginal cost for their water, they should be able to enjoy water as they like in and around their home, providing that they are doing it efficiently, and that is why restrictions are being replaced with water-saving rules which are really good housekeeping measures. We strongly support the implementation of the COAG Water Planning Principles, which the capital cities, generally speaking, would have no trouble achieving. But in regional and rural areas, as we've heard, there is long way to go. I certainly come from a point of view that, in utilities, if you get the price of water right a lot of your problems just disappear.

What I would just like to say about scarcity pricing, which has already been touched on, just a couple of different perspectives of that, is that if you did have a scarcity pricing regime in place, 30 per cent of the population would never ever see a price signal, because they are tenants. With the exception of Victoria, in all the other states the landlord gets the bill. The second thing is probably 20 per cent of our population are so wealthy, it wouldn't matter what you charge them, they would still use water as they like. People have probably forgotten that five or six years ago, in the depths of the dryness in Sydney, one of the key issues was the number of private desalination plants being put in by harbourside residents to wash their cars and keep their gardens' lawn. So try sending them a price signal when they have got that as an option. Also, I think by the time you have got scarcity pricing models acceptable to

politicians, they would be so compromised that they would probably not fulfil their purpose.

Just under the next heading, Regulations, the second last one, is that we strongly support independent economic regulation around Australia. We have got it in New South Wales and Victoria, and it's on the way in Adelaide, but we need to make good progress elsewhere in the other states and territories. One of the things that we thought the Productivity Commission could have a look at is the merits of a single regulator; a single economic regulation, a single environmental regulator. Or at least, if we can't have a single regulator, that there should be nationally consistent principles for which each of the states' and territories' regulators set their prices and the like. One of the reasons we have raised this is that we think that if economic regulation is introduced in all of the states and territories, do we have the staff or the skills and the experience in Australia to actually staff those organisations around each of the states and territories? After all, we only are a very small country of just over 20 million people.

The final area we looked at was industry structure. Some of these issues came up in the Sydney Water presentation. We certainly believe that there is the potential for competitive frameworks at the wholesale level, particularly in jurisdictions where you might have multiple sources of water supplying large cities. It is more problematic when you have got one big dam up the back of a city supplying a city and town. But we are saying, let's have a look at this. Once again, the retail component, we accept, is contestable, but it is only 5 per cent of a utility's cost, so we don't envisage that we'll be run over with new entrants coming after this section of the market.

I think the final thing to say about industry structure is that it certainly won't be a one-size-fits-all. The last thing you would ever want do is further disaggregate the 106 New South Wales local government water utilities. But you might think about disaggregating some of the larger capital cities and, likewise, there are significant economies of scale in water, there are significant fixed costs, and that's why we have been strongly advocating that the days of local government funding water utilities across Australia have come to an end.

DR CRAIK: Thanks very much, Ross. Thanks for that and thanks for your submission, which has detailed lots of information. A comment about the independent procurement or planning entity where there are bulk sources of water, but perhaps not for vertically-integrated monopolies, we would be interested in your arguments about that. Because is there a case, given that there is a vertically-integrated monopoly, that perhaps, for reasons of their own existence, they prefer to limit the range of options that they look at, as opposed to an independent group who might call for expressions of interest and get a wider variety of, perhaps, more innovative options, particularly where there is a vertically-integrated

monopoly.

MR YOUNG (WSAA): You can certainly argue it both ways. One of the issues I have with an independent procurement entity is that water and waste water infrastructure, the big projects, tend to be lumpy. They are normally driven by either some significant event, an incident, or a dryness. I'm just not quite sure what an independent procurement entity would do between those lumpy periods, and they might be five or 10 years. The other point being that most of the integrated monopolies that have been involved in planning those planning process, because water is a quintessential social and economic commodity, do necessarily involve quite extensive stakeholder involvement and community consultation in the formation of those particular proposals.

The third thing to note about this is that if you go right back to 1994 the theory was that all of the planners would leave the utilities and go over to the state government departments to do all the planning, and the utilities would then just concentrate on service delivery, under the corporate model. To a certain degree in many of the other parts of Australia there's still information asymmetry between the utility and the planning and the policy section.

DR CRAIK: Everybody else.

MR YOUNG: Yes, in state government. So whether we like it or not, those utilities are still going to have to be involved whether it's an independent entity or it's part of the government planning process, because you need good information to get good plans.

DR CRAIK: As I understand it, the way the ERA propose it is that the independent procurement entity would continue to exist and they would look at supply-demand options. They would be the ones who would have the decision-making authority in relation to restrictions. They would not have the policy ban because, even where you suggested there's lots of stakeholder consultation, if there's a prior policy ban, then that one is not going to get up anyway, and the IPE might also be the price setter, so you may not need the economic regulator.

Someone also suggested you might put a grid management role in there as well. I understand your point that you may only have a drama about needing more water periodically, but, as we understand the model as proposed, this entity would have quite a broad ongoing role.

MR YOUNG: Maybe I could ask Craig just to make a comment on that.

MR FENTON (WSAA): The theme that's sort of recurring through the submission is around wanting to ensure that whatever reform direction is chosen is done on

evidence base of costs and benefits. So where there's perhaps a reading of caution in the submission it's simply saying, "Well, can you think through properly what those dimensions might be?" So it may be that with a vertically integrated monopoly utility some form of independent planning is warranted, whether that extends to independent procurement is a different issue. A lot though depends on the particular circumstances of that particular utility.

The caution, in our minds, is about going three steps ahead and saying that implies this aggregation is the necessary solution, because there are a whole heap of attendant costs, in terms of losses of economies of scale and scope. Maybe they'll be justified by the benefits of that independence in planning the procurement decisions. But that really does come down to a question of the relative merits of each particular option on the table. I guess we see this inquiry as a good place to ventilate some of those arguments.

We heard from Infrastructure Australia about these two camps of reforms. There's the things that everyone generally agrees with that aren't being done quickly enough or aren't being done quite properly, but there's no argument about what the end state should be, so that's all costs recovery and proper pricing and so forth. Then there's the other things where there really is some debate about what the right model is: is there a single right model or is there a smaller group that needs to be resolved too. This inquiry is an excellent place to try and get some definition around those and a bit of clear direction for reform and can form obviously the biannual review that the MWC will run.

DR CRAIK: Thanks. On the issue of policy bans which you raise, Ross - and I guess the obvious example is no recycled water in drinking water - one might say that governments like putting in place a policy ban is just responding to how the community feels about it. In that sense, is that a reasonable thing for a government to do, or what is a way to deal with that in the longer term if that's not a desirable state of affairs?

MR YOUNG (WSAA): If you look forward to 2056 where the ABS population projections go and you look at the Series A there, the population I think is about 42 million people. I am not convinced going out that far that it's a prudent move to have particular bans on particular sources of water. I think that it's incumbent on the utilities and the governments to start working through the process of consulting, educating and getting people used to the fact that it is possible with the technology today and the reliable nature of it to actually blend recycled water into existing dams and other water supplies without compromising public health.

DR CRAIK: I'm surprised people don't make more of the fact that it happens down the Murray River all the time.

MR YOUNG (WSAA): I'm going back to water's peculiar - people view water coming out of a river as being natural and part of nature, whereas if you recycle your water and it hasn't been put back into the environment it's seen as an industrial product, and so therefore it can't be as pure and as clean as the pristine water that's coming out of the river. Of course, as you know, we're all compromised in terms of how much recycled water we can use in urban Australia because of our love of the coast.

If you go to the United States where you've got large cities, like Denver and Chicago and all of those, it's very easy to treat your waste water, put it in a large river - because they have got beautiful rivers over in the US, that we don't - and then pump it out; whereas if you're a Sydney or a Melbourne you've really got to pump it from the wastewater treatment plants, which are down at the lowest point, pump it back up into an environmental buffer, and - taking Sydney as an example, I think it's about a 200-metre lift and about 70 kilometres distance from where the coastal treatments plants are - and Warragamba Dam - with the carbon and the energy analysis on it, it's not a pretty picture.

DR CRAIK: One of the points you make - and you guys have done a fair bit of research on this - is the real options approach to planning. You're mentioned that ACTEW have used it.

MR YOUNG (WSAA): Yes.

DR CRAIK: I don't know if any other water utilities have used it. But if they haven't, what is the impediments to getting it.

MR YOUNG (WSAA): Craig, would you like to answer that?

MR FENTON (WSAA): I believe they have applied it in different forms. I think it's one of these evolutions where options evaluation has gone from a fairly simplistic sort of DCF-style approach to a lot wider frame of reference. Certainly some of the challenges that we see, and we saw from the membership of WSAA in the compilation of the submission, is around understanding how that would be treated by economic regulators, given that it's a complex process and it leads to complex outcomes that are potentially difficult to explain.

So if you end up with a higher net cost outcome, how do you demonstrate that that's actually better for customers, because of the risk or insurance benefit that's, if you like, embedded in that particular option? It relies on a lot of subjective information, so it becomes harder to validate. You end up with a lot of debates between engineers and other experts about the relative merits of those sorts of options. So we think the methodology is sound. The challenge has been in the widespread application of it, because of the information requirements and ensuring

that other stakeholders can, if you like, sign up to the outcomes that come along with it.

DR MUNDY: I think in your occasional paper you drew a parallel with pharmaceuticals, which I thought was interesting because there's a general acceptance in pharmaceuticals that you'll spend a lot of money and get nothing for it. I don't think that the polity is yet at the point where the option to abandon is reputationally costless. Like, I think it would be one thing for a regulator to deal with the fact that a utility had gone down to a point - had spent 20, 40, 50 million dollars, exercised the option of abandonment, which may be the rational thing to do - let alone the shareholding minister having to explain why 20, 40, 50 million dollars had just gone up against the wall, so to speak. Have you thought through how you might handle those issues? It's the option for abandonment that I actually think is the most difficult to deal with.

MR FENTON (WSAA): I think that issue is there now. There's large sums of money spent on planning frameworks. Perhaps it's not as identifiable that that amount of money was spent on a particular project, but the costs of robust planning exercises are growing each year, and invariably in that there are studies that are done on options that are then chosen not to be progress. So I suspect that's an issue of scale of costs and the transparency of the link between them, rather than the fact it's not happening at the moment.

DR MUNDY: The evidence of abandonment being a large amount of work sitting on the ground, rather than some consultants' reports.

MR FENTON (WSAA): Yes, indeed.

DR CRAIK: Moving along, you have talked about planning, and obviously in the past rainfall and inflows were the key things that people looked at. Now things have changed of course, with the climate changing; some use seven years, some use 10 years' historical records, but clearly it's a very short time. There seem to be slight differences of approach in different jurisdictions. Is there a case for a more systematic approach to that, for the planning?

MR YOUNG (WSAA): Certainly if you go back 10 years ago, everyone relied on the historical record as their basis of moving forward and then it was a matter of determining what the community were willing to pay and then you could calculate the frequency of water restrictions, the duration and the severity of water restrictions and you quite rightly point out since climate change hit us, that approach doesn't really work any longer. We are going through an approach now as an industry to see if we can get a consistent replacement for that model, given that we now have up to 35 per cent of all our water supply to our capital cities provided by desalination. If all those desalination plants are upgraded to their full capacity - and I'm including the

two that aren't yet completed, Melbourne and Adelaide - that would represent just over 50 per cent of all the urban water supplies, based on consumption in 2008-2009.

So that shifts the ground considerably in terms of risk management, but we've still got to go through that process about how do we plan in this uncertain environment. Most of the utilities have undertaken studies by the CSIRO trying to get down to a very granular level about the impacts of climate change, but of course that's all subject to uncertainty. One of the things we have to do as part of the process is go back to our customers and seek what their willingness is for particular levels of restrictions under particular climate scenarios and also what they're willing to pay. It's very difficult to do a number of these things when there's been water restrictions on for such a long time.

DR CRAIK: There's been a substantial education program in relation to good corporate citizen use of water and there has been, not necessarily as a result of that directly, but a strong community support for restrictions. Do you think if you had a greater notion of scarcity pricing and water pricing accompanied by a very large education program again, a similar degree of persuasion, that people would accept it more readily than they do now?

MR YOUNG (WSAA): A couple of things. I think it's one of the great social revolutions to the extent that a water saving ethos has developed in urban Australia and you've seen in our submissions just how much per capita consumption has reduced over the last 10 years.

DR CRAIK: Except in Darwin, where - - -

MR YOUNG (WSAA): Yes, in Darwin. One of the figures I always quote to show this is that Sydney now uses the same amount of water as it did in 1974 and yet there's about an additional 1.3million Sydneysiders living in Sydney. Over the corresponding period, household energy consumption has doubled in Sydney. So you've got energy going up like that, water consumption going down like that. I've got this view that the reason that climate change was such a lightening rod issue in Australia was because of water restrictions.

Going back four or five years ago, people were genuinely petrified that we were going to run out of water. Embracing water conservation and being careful with your water is something you can do at home and people think it's something that's a little bit like your kerbside recycling and things like that and people think, "Well, this is one thing I can do for the environment without having to spend a lot of money," and the like. So I think that drove a lot of the focus on water conservation, this fear of running out of water.

So I think that in terms of the overall approach to managing demand, of course

it has to be a portfolio approach, taking into account community education, encouraging people to buy water efficient machines, and that's why the Commonwealth WELS Scheme has been so successful, that people can actually go in and buy the most water-efficient machine. I think the other thing that will drive water conservation in the future will be energy prices because 30 per cent of all household energy goes to heating hot water. When you do shower less or buy a water-efficient washing machine, the biggest payback to you is not in the water bill, it's in the energy bill.

But I think that innovative tariffs and making sure there is a strong price signal there must always be accompanied by a range of those measure because the utilities get criticised for lifting restrictions. I've often said that if the government tried to restrict people to 30 litres of petrol a week in their car, there would be riots on the street, yet people embrace water restrictions and love them. So it gets back to there's something different about water which throws up all of these problematic but intriguing issues.

DR CRAIK: Do you think that more frequent billing of consumers would help move you towards having a price better reflected - - -

MR YOUNG (WSAA): I think in theory it would because if you fill up your car at the service station, you get the pain of the bill immediately. With your water bill, you might have to wait till the end of the quarter to realise that you were prolific or frugal with your water bill. But even then people complain a lot about the fixed charge and the fact that you don't get a lot of reward. I just should make one point about water pricing, that up until about 18 months ago, despite water prices going up substantially right across the capital cities, in terms of the bottom line for the water component of the bill, the bills remained pretty much the same.

DR CRAIK: The volumetric charge.

MR YOUNG (WSAA): Yes, the volumetric charge. There's been very little change, because the reductions in demand have more than offset the water prices, but of course we're running into the marginal increments by which we can improve water efficiency and now the water prices are starting to kick. I'm a big believer that eventually we will have smart meters and electronically people will be able to monitor their water and possibly send out bills in months. There are some costs with that, but with new technologies, there's probably a way around that. In parts of the United States, they actually do bill on a monthly basis and - - -

DR CRAIK: Do they have smart meters or some kind of sophisticated metering?

MR YOUNG (WSAA): In one of the cities I'm aware of, they have smart meters and they actually put the laser on the garbage truck because the garbage truck is the

only vehicle that goes around every street and so it can read the smart meter around the street, but I think that we can leapfrog that technology. There are a lot of concerns about smart meters for social security and other privacy reasons, but I think that with smart meters there is the opportunity to introduce more innovative tariffs, particularly garden water. People who love their garden, might be able to sign up to an agreement where for paying more for their water, but they've got a higher security of supply.

But there are some political impediments to that because, once again, I get back to the peculiar nature of water, that when it comes to water, we're all meant to be socialists, so everyone has got to pay the same price for water. If you were able to pay a higher price so you could water your garden, this would be greeted by people buying their way out of restrictions. We don't all drive the same car, we didn't go to the same school and we don't live in the same suburb, so that gets back to that special thing about water again where - - -

DR MUNDY: That argument about more flexible pricing, I think you've alluded to in your submission that Sydney Water had tried and found a regulatory framework too much of a burden to soldier on. Do you have a sense of how we could make, in general terms, those regulatory frameworks more flexible certainly in their design sense, because you obviously seem to be a fan of independent price regulation.

MR FENTON (WSAA): The view that came out from consultation with WSAA's member - and it wasn't just limited to Sydney Water - was a lot of the effort and time and cost of regulation is going into detailed elements of tariff design. It requires a lot of information about the customer base and demand and requires forecasts that are inherently uncertain and that's what's taking up a lot of the time and, if you like, wondering out loud, "What is the benefit that is actually coming out of that?" If regulation is predominantly about ensuring that the decisions the business makes which impact on costs which are really about planning and efficiency of capex and opex delivery and an overall level of cost recovery. If that's the primary preserve of the regulator, does it need to extend into this extension.

A related issue of that is we are favourably exposed to independent economic relation and you see that it's delivered transparency and discipline and some quite tangible efficiency improvements. There's a view that that could readily be applied to the areas where it's not presently applied but that model needs to be cognisant of the costs of that. You could not apply a full IPART ESC-style model and expect a smaller local council business to be able to respond effectively, so you need to find, if you like, a more light-handed measure that perhaps generates 80 per cent of the benefits of regulation without the attendant costs of the very, very detailed econometric modelling of demand and review by multiple experts and those sorts of things that go into regulations.

DR MUNDY: Do you have a sense that there is scope for even the ESC, for example, which of its own bat rolled back the way it regulated access charges to the Port of Melbourne, of its own back rolled them back and came up with a much more light-handed regime? What you're talking about is what some of regulatory calls the fallacy of precision, things are inherently uncertain and regulators are making incredibly decisions which may go beyond the cost.

MR FENTON (WSAA): It's about precision but it's also about actually who's responsible for making those decisions. You know, should water business X have to make the decision on what it wants to charge for individual products and then be responsible for that or should it sit back and say, "The regulator told us this is what the price is," and they sort of absolve responsibility for it. So I suspect there's an element of a business actually properly taking account of its relationship with its customer and not having to abrogate that to a regulator.

DR MUNDY: Do you think that leads to governance problems when businesses are in a position to say, particularly government-owned corporations, "The regulator made us do it."

MR FENTON (WSAA): Well, that's what there's at the moment. We suspect that - the view from membership again was that there is a lot of costs associated with that and they are sceptical about whether that is actually generating benefit to customers and allowing greater flexibility in fact might have both a reduction in the cost of those processes and allow you to search for more innovative options that better meet individual customer's needs but still with the overall protection of the regulatory framework that's important.

DR MUNDY: You raised the issue of a single national regulator and this was electricity's model and clearly the electricity industry crosses state boundaries in the way that your industry doesn't. One of the concerns has been the hollowing out of jurisdictional regulators and what saved them as institutions was to set the economic regulation of the water sector because they would have been left with taxes and precious little else and bearing in mind that there may be a reason, local knowledge and these are local businesses, so a local regulatory framework. Do you think what you're seeking to achieve by suggesting a national regulator could be achieved by a national law administered by state regulators, so you get national consistency but that benefit of locality.

MR YOUNG (WSAA): Yes. We support national consistency over and above, you know, whether there are one or seven regulators, so we'd be happy either way and I can see the virtues for a single as well I can see the virtues for individual state and territories. The most important thing is the same rules apply across Australia and coming from Canberra you'd know that if you did have that independent based in Canberra people would say, "Well, what does he or she know?" and things like that.

DR CRAIK: Exactly.

MR YOUNG (WSAA): These are all of the little complexities you deal with.

MR FENTON (WSAA): There's a wider issue here about where are the national spillovers? If you think about the NWI more broadly, a lot of the focus was Murray-Darling Basin trading, water planning issues that have quite clearly tangible cross-state, cross-jurisdictional impacts. Urban water is a little bit different, a lot of the impacts are local and there is an argument to say, "Well, if a state wants to allow its businesses to be run suboptimally, what is the concern of other states?" A lot of those costs are actually be borne locally. I think if you scratch the surface it's different, there are a range of spillovers, there are issues about risk and whether you should accept lower standards in certain areas, health risks can potentially translate across when you've got population that moves between states, and the overall sort of regulatory efficiency argument again has a lot of dimensions, so some level of better consistency of approaches. We touched on the skills issues before; skills issues are important for utilities, they're important for regulators as well.

DR CRAIK: I guess even though in relation to major metropolitan sectors it has limited effect, except perhaps in the case of a couple of them, the increasing networking, on the east coast at least, of water right from, like, Brisbane now, picking up Canberra, Melbourne, Adelaide - Sydney is not quite there - ultimately, presumably, there will be more connectedness in the whole system. The question about national consistency, do you believe that applies also in health and the environment as well as economic?

MR YOUNG (WSAA): Yes. Maybe I'll get Adam to talk about the public health side of it and then I'll address the environment.

MR LOVELL (WSAA): Certainly on the health side of it the Australian drinking water guidelines are set by the National Health and Medical Research Council, and all the state public health agencies actually enact those guidelines. I would say the general view is it's actually working quite well. It's working effectively. Except for some more rural or semi-rural areas, there's hardly any boil water alerts and no major health impacts at all - in fact I think we're blessed in Australia by some of the best drinking water in the world - and those are subsequently being followed up by the recycled water guidelines, which are also set by the National Health and Medical Research Council and are also national, and largely are again enacted by the state based agencies.

DR CRAIK: So how have we managed to do it in health and not in some of these other areas?

MR LOVELL (WSAA): Because it's much more site-specific in terms of environmental regulation. One of the issues that we're facing as a national water industry is with, for instance, the now defunct CPRS the urban water industry was a covered sector, which meant that we would have to be buying permits for the release of our greenhouse gases from our plants. But there's very little room to move, because most particularly wastewater treatment plants are all by biological action. So without stepping up with significant costs, the industry was effectively facing permit liabilities, which would be passed on to customers for very little benefit. That will probably come back again, no doubt, when the government decides what it wants to do, but they're some of the emerging issues for us.

MR YOUNG (WSAA): Just on the environmental side of it, I think if you went around and asked a lot of the WSAA members, one of their key frustrations in the utility would be the duplication between federal and state environmental - - -

DR CRAIK: Presumably local as well?

MR YOUNG (WSAA): Yes, and local. In particular, the duplication, and you just jump over the hurdle in the state process and you're automatically into the Commonwealth process, and in 18 months or two years' time you're finally getting your approval or your knock-back, or whatever. So we think there's great scope for improvement there. One of the other issues is that quite often the regulators only look at those with deep pockets, rather than getting better and less costs solutions by thinking a little bit broader. An example would be that, rather than force a water utility to upgrade its wastewater treatment plant to improve effluent quality, maybe money would be better spent in the catchment, dealing with all of the diffuse sources - you know, coming from turf farms and dairy farms.

DR CRAIK: Sort of a Catskill approach.

MR YOUNG (WSAA): Yes, and things like that. But because those people don't have deep pockets, the regulators sort of come straight back to the utility. Another example is that there's a fixation on one particular part of the environment without any acknowledgment about what externalities there are to another part of the environment. I think when you increase effluent from about secondary quality to tertiary quality the amount of energy consumed goes up by about fivefold and so the EPA regulators generally just look at the quality of effluent and say, "Well, that's what we're going to set it at," but no-one ever talks about the additional carbon that's being put into that. So I think overall that there is a scope for the economic regulators to look at things more from a sustainability point of view. I think a number of people often get frustrated when there's not a lot of evidence put forward to justify why those decisions were made.

DR CRAIK: Just one final question, because we're running out of time. This

whole issue of integrated water planning, sometimes it seems that water utilities have conferred on them or take up a role when they kind of get involved in this and therefore consumers wear the cost in some way or other. Do you think there's a case there for a detailed cost-benefit analysis for all of that, and then maybe CSOs from whatever government mandate, some of those kinds of things - - -

MR YOUNG (WSAA): I'm always a big believer in getting all the costs out in the open, and then you can work out how you're going to fund them or whatever. But there's no doubt that the community out there have set the hurdle very high for the water industry when it comes to sustainability. There is no doubt, going forward, with population growth that the majority of those people are going to reside in our major cities and urban centres, and that there are new ways where we might be able to provide reliable and secure water resources by not just having the one through model - you know, dam coming through and a little bit of recycling and discharging into the river or the ocean - but go through some concepts that are well-advanced now, like cities of the future, where we might be able to sort of capture a lot of the urban run-off, temporarily store it in aquifers or another system and actually use that to not only bolster our existing potable supply but to just make the cities cooler in summer and more attractive, because urban water touches every part of urban life for people. It's not just the drinking water, it's the wastewater. I saw a photo the other day of Melbourne in the summer of Black Saturday and it just looked absolutely terrible and it reinforced to me that much of the liveability of our cities gets back to water in one way or another.

DR CRAIK: Thanks very much, Ross. Thanks, all three of you. Now we'll call a break for lunch. We'll resume at 1 o'clock with the National Water Commission. Thanks very much.

(Luncheon adjournment)

DR CRAIK: Thanks very much for coming along. Could I ask you both to introduce yourselves and state your position just for the record.

MR CAMERON (NWC): James Cameron, acting CEO, National Water Commission.

MR FARGHER (NWC): Will Fargher, general manager of the water markets and efficiencies group, National Water Commission.

DR CRAIK: If you would like to make a brief opening statement, James, we would be more than happy to hear it.

MR CAMERON (NWC): Thanks, Wendy. I will make it brief and refer you obviously to our submission that we made late last week, and apologies for the late date of that. We welcome the inquiry that the Productivity Commission is undertaking and believe that it has the potential to significantly advance discussion about urban water reform generally in Australia. From the commission's perspective we believe that Australia is fortunate to have a blueprint for water reform in the form of the National Water Initiative signed in 2004 which aims to produce a nationally compatible market regulatory and planning system for managing water resources across the country to optimise economic, social and environmental outcomes and the overarching goal and objects of the NWI, in our view, are as relevant to urban water matters as others part of our water systems.

From the commission's perspective we believe that urban water services should deliver secure and reliable levels of service to meet customer needs in an efficient manner while ensuring that the industry is environmentally sustainable and that public health and safety targets are protected. The role of the commission is to advocate for water reform within the framework of the NWI and to report to government in an independent way on the progress of jurisdictions and meeting their commitments.

In 2007 the commission produced a biennial assessment report which indicated that jurisdictions had largely delivered on those commitments which were specified in relation to urban water. Those commitments, in our view, were relatively limited but nevertheless they had been largely delivered. But from the commission's perspective, we believe those commitments are insufficient to deal with new challenges and certainly the years since in which water supply issues have been a critical for many areas of Australia has demonstrated that case. We've seen governments respond across the country in a number of ways by making significant investments in urban water supply and improving the management delivery of urban water services and making some reforms in relation to pricing and there has been some degree of greater innovation and more efficient water use.

But we remain concerned that that underlying objective of delivering safe and secure and reliable urban water services has not necessarily been delivered across the country. There are some areas of incomplete implementation of the reform commitments and that includes some further work in relation to water pricing, long-term supply and demand, planning and independent economic regulation and so for that and a number of other reasons the commission is supportive of this further analysis.

In our view many stakeholders and many governments remain unconvinced that significant further reform in urban water is necessary and from our perspective we believe that both the work we're doing and the work the Productivity Commission is doing represents an important opportunity but an important challenge to develop a compelling case which identifies the benefits as well as the costs of reform and presents a case for movement forward. In particular we believe that it will be important that the inquiry look and make some assessment of the full range of urban water systems, including metropolitan, regional, rural and remote areas, including indigenous communities.

The commission itself is focused on preparing its third biennial assessment report which is due to report in the middle of 2011 and in addition to being an update on the progress of jurisdictions and delivering on their commitments, our act requires that that assessment be a comprehensive review of the impact of the National Water Initiative and therefore will potentially provide a space for the commissioners to make some indication of where they believe the future directions of water reform should go and in the area of urban water we have a number of projects that are aimed at providing an information base for both that progress and impact evaluation work which the Productivity Commission is aware of, including the project looking at future directions for urban water sector, exploring opportunities for competition in the sector, a review of water pricing reform under the NWI and a review of the regulation of water quality. As that information is made available, we'll be happy to share that with the Productivity Commission.

DR CRAIK: Thanks very much. Just one question to start, what do you think are the priority areas for reform in the urban water sector?

MR CAMERON (NWC): The commission is, as I indicated, of the view that the range of commitments to reform which were identified under the NWI are relatively limited, with what we have seen over the last 10 years or so is a period of supply crisis which has been addressed through a heavy use of water restrictions but also some significant capital investments across a number of relevant jurisdictions. We are concerned that the framework within which urban water operates, the institutional arrangements and the structures, that it's not necessarily clear that that system provides for the most efficient planning and supply decisions to address the water security requirements of the Australian community. There are a large number

of institutions that operate within the system.

The home for many of the investment and other decisions are not always clear in relevant jurisdictions and there is some question in our view about whether the existing arrangements provide for a comprehensive and objective analysis of the full range of options available in front of Australia's communities to deliver their water security requirements.

DR CRAIK: Thanks. Warren.

DR MUNDY: I guess it sort of follows on from that, you make a point that you're concerned about overinvestment. Is this because you're concerned about asset gold plating, are you concerned about the simple capacity to deliver the work that's required from an operational capital works perspective, are you concerned about the billion dollars that we understand that needs to be spent in Tasmania to make things fit for purpose? What's the nature of the concern?

MR CAMERON (NWC): I think the nature of the concern is in fact a higher level concern which is that when the significant investments have been made and when decisions have been made about it there hasn't been a transparent, clear articulation of the range of options that have been considered, the alternatives to that which has been finally decided and whether the options or the investments which have actually been made are the most efficient way of delivering both security in relation to water supply but also delivering on service level standards, consumer service standards and delivering on environmental and health and safety outcomes.

What that means is there are a potential range of suboptimal investment outcomes. We in the commission do not have the capacity, it's not our role to make individual assessments of individual's decisions made but we believe that there is room for considering whether there are better institution and structural arrangements which might give the community a high level of confidence of the investments that might be made in the future are the most efficient ones that can be achieved.

DR MUNDY: Does that concern extend across those jurisdictions which have independent pricing regulators in addition to those which don't?

MR CAMERON (NWC): I think the short answer is yes. The independent pricing arrangements are obviously important reforms but many of these decisions are made in the context of planning decisions which are decisions made through a range of processes and the pricing regulation, while it has the potential to provide some discipline, is not a comprehensive way of providing communities with a level of transparency and accountability that we think is appropriate.

DR MUNDY: I'm not familiar with the IPART legislation but I am familiar with

the legislation of Victoria. One of the things that independent price regulators are supposed to do is prevent inefficiency in investment, so what you're saying is that your concern is that despite the statutory frameworks that have been set up for what are generic price regulators, they're multisectoral regulators, it's not adequate in dealing with the investment efficiency question.

MR CAMERON (NWC): What we're saying is that we believe there's a question that needs to be asked about whether the frameworks are right. As I said, independent pricing regulation, particularly where they're concerned with the issue of efficient investment is one form of discipline but the ways in which investment decisions are made are broad ranging that the retail price regulation frameworks.

DR MUNDY: Is your concern primarily around investment decisions and supply augmentation or - I mean, because there are really two bundles of investment decisions that water utilities are being asked to make. There are a whole pile of decisions around new supply augmentations and there are some models being proposed by the ERA and then there's that whole range of other things, like investment in new sewerage works, capital upgrades and those sorts of things. Is it the prior set that you're more concerned about which are the response to the "recent crisis" or the more normal business as usual type stuff.

MR FARGHER (NWC): Perhaps if I could just contribute there, if you don't mind, James. I think to narrow the question to the scope of the economic regulators is missing our point about the effectiveness and efficiency of the range of supply and demand side measure that we now have available to us to deal with the supply crisis, if you want to put it that way. We'd say that it's more a question about the broader objective to try and deliver safe, reliable, secure and sustainable water supplies to our urban communities. We we now know that we've got a whole range of demand-side measures, pricing, water restrictions, water efficiency measures in homes and in industry. These will have an impact on demand clearly. We've also got a whole broad suite of supply-side measures now. Some of those supply-side measures like investment in new dams or desalination within the purview of the water utility and therefore the relationship between the water utility and the economic regulator is relevant. Some of those decisions are impacted on by government policy decisions and so whether there's a ban on water recycling or whether there's a ban on rural urban trade will have a material impact on the decision-making framework of the business and therefore the decision that has to be justified to the regulator. What we're saying is that we need to have a look at the broader institutional arrangements, not the institutions in the sense of the physical institutions of the water utilities but the broader institutional arrangements when considering the range of laws and legislation and hard institutions that impact on that relationship so that we can assure ourselves that the full costs and benefits associated with the gamut of supply and demand-side measures are being taken into consideration.

That will go to decision-making well beyond the scope of economic regulators such as the ESC or the IPART and the water utilities, it will involve participatory decision-making, what communities are willing to accept in terms of various different supply options, their preference for supply options of demand-side options and government policy frameworks. So we think it's a much broader challenge that we're now facing.

DR MUNDY: Your concerns are primarily around supply and demand augmentation issues from the sound of things.

MR FARGHER (NWC): Sorry, I wouldn't think it was fair to characterise our concerns as being solely around supply and demand augmentations.

DR MUNDY: I think we're going to have a semantic discussion, but I think I understand what you're saying.

DR CRAIK: Can I just follow up on that while you're on that general issue. Given that governments have generally kind of ruled out the notion of recycling for potable water - the provision of potable water as supply augmentation, kind of rule it out as an option before there's a public transfer cost-benefit analysis, but the community likewise doesn't really want to drink recycled water, so do you think in ruling it out before you spend time analysing it, the government has actually been quite sensible in doing that?

MR CAMERON (NWC): The commission in fact issued a position statement on urban water recycling today in which we have called for the removal of those arbitrary policy bans on water recycling and I think the reason for that is, in our view, the full range of supply options should be on the table. They should be assessed fairly and objectively. In the National Water Commission's view the standard of science and the regulatory arrangements we have in place in Australia today mean that you can have water recycling arrangements including for drinking purposes that provide a level of safety, human safety and other benefits that are equal to those of other supply options.

You're correct that there is a significant debate in communities about that, although in recent times there is a survey undertaken by the Australian Water Association which suggested that a significant proportion of consumers actually feel that they have inadequate information to enable them to make judgments about the use of recycled water, including for drinking purposes. So it's not necessarily the case that there is an immoveable level of public opposition in relation to recycling as an option. The National Water Commission believes that what we need is a level of leadership at the political level and also from the urban water sector itself to engage with the community about the options, to have a sensible debate to put the information on the table and then to enable fair and objective assessment of those

options to be considered.

DR MUNDY: Has the commission expressed a similar view about urban rural water trading?

MR CAMERON (NWC): The commission's view at a general level is that all options for addressing water security should be on the table, that they should be assessed fairly, that they should be assessed against their costs, their benefits, their risks and their wider impacts including externalities and that if we are going to address our urban water supply and management objectives, we need to be able to assess the full range of options and make the optimal investment decisions.

DR MUNDY: Ken Henry when he was chair of the NWC - - -

DR CRAIK: Ken Matthews, I think.

DR MUNDY: Ken Matthews rather - made some observations about urban water reform lagging behind other major areas of utility and infrastructure reform and a lot of those reforms were actually about the introduction of competition and the introduction of markets; there might have been some other things about public sector work practices and things as well. I'm assuming that Ken was articulating the view of the commission and that probably hasn't changed an awful lot. Is the view that this is an opportunity to pursue more competitive arrangements somewhere in the value chain or is it a view that there may be institutional reforms, planning reforms that are to be better facilitated?

MR CAMERON (NWC): The National Water Initiative contemplates a planning, regulatory and market system of management of Australian water resources. So from the commission's perspective the use of market signals, the use of price as a signal and the use of competitive dynamic as a signal is an important component of how we achieve the best for our water management and that includes in the areas of urban water. So I think the short answer is that the commission's view is that we should be open to and we should be actively investigating and pursuing opportunities for making use of that sort of discipline where possible in the urban supply chain.

As I said, we have a project under way right now looking at opportunities for further competition in the urban water sector, so I wouldn't want to pre-empt any particular views about where those opportunities exist but certainly we think we should be constantly looking at that question and importantly recognising that price signals have an important automaticity about them which helps manage the dynamic nature of markets and allows planning and regulatory arrangements to apply only where they are the best approaches.

MR FARGHER (NWC): Perhaps if I can just add to that. As James has

mentioned, we're not clear on where those opportunities most lie and that's why we made the recommendation in the 2009 biennial assessment that this required further investigation into the opportunities for further competition and we were particularly pleased with the reference of this inquiry to the Productivity Commission because we do see making the case for further reforms for economic reform of the sector as being a particularly important part of this inquiry, you know, the strong evidence base and a case for reform and thorough investigation of that because it's clear from our interaction with stakeholders across the industry that that case isn't well established or accepted, so we see this as being a very good opportunity for that.

DR MUNDY: I don't know whether you were here earlier this morning but there was a bit of a discussion with Infrastructure Australia about the potential for incentive payments for some - we might call them "slower" - jurisdictions to catch up with reforms that have occurred in other jurisdictions, like Victoria, for example, in the metropolitan circumstance. Does that commission have a general view about the appropriateness of Commonwealth grants into what are supposed to be full-cost recovery organisations and if the commission thinks they should happen, how they should be assessed?

MR CAMERON (NWC): I think the issue of incentive payments is a little bit different from grants but from the commission's perspective we would take the view that grants for infrastructure purposes or other purposes should be only very carefully actually adopted. As you say, water pricing and water as a resource should cost its full price and where there are grants or other subsidy arrangements that has the significant potential - in fact does distort the market.

DR CRAIK: Hasn't the commission given grants for infrastructure and urban water things?

MR CAMERON (NWC): The commission doesn't administer an infrastructure grants program. We provide support for research project activities through the Water Smart Australia program which is administered by the Department of Sustainability, Environment, Water, Population and Communities and through other more recent issues there have been infrastructure grant arrangements. In our view, where they do occur and where they have been justified on the basis of a clear assessment that the subsequent pricing arrangements should take full account of the underlying costs so that consumers still face the real cost of the resource that their consuming.

DR MUNDY: That cost would include a normal return on capital for any investments that are - - -

MR CAMERON (NWC): Consistent with existing urban water pricing principles.

DR MUNDY: That's not the question I asked, with respect. We know that, for

example, a lot of non-metropolitan water authorities really are covering their operating costs and not making returns on capital, so I'm just trying to - - -

MR FARGHER (NWC): As James said, consistent with the agreement by the states and the Commonwealth to the National Water Initiative, there is a commitment to move towards upper-bound pricing and upper-bound pricing as it's defined in various publications we've released and in the national pricing principles, include earning a rate of return. So we would say yes, recognising that, as you say, that's not necessarily the case in all jurisdictions.

DR MUNDY: I guess the interesting question is it's not the case in all jurisdictions and accepting there are some problems with some small regional communities. How do you think we can work on this? How do we drag the people who are lagging behind? I'm curious about what mechanisms a state government who is party to the agreement could actually - what force they can bring to bear on a community to provide a water service through a local authority to actually get these principles implemented?

MR CAMERON (NWC): In relation to both New South Wales and Queensland where this is most significantly in issue, the state governments have significant legislative powers to deal with local government generally and can pursue a range of objectives through their management of local government matters. I think from the commission's perspective we believe that it's important for communities to be fully aware of the circumstances of the water supply arrangements. We produce on an annual basis a performance report of urban water providers which provides communities and the Australian community more generally with information on pricing movements and the performance of their water supply arrangements.

This Productivity Commission inquiry is an important opportunity to lay bare what the different situation is in different parts of the country in terms of urban water supply, not only in terms of pricing but service levels and the opportunities for a different or better arrangement in those areas.

DR CRAIK: Do you think incentive payments have a role here?

MR FARGHER (NWC): Can I just make a comment about the incentive payments, if you don't mind me cutting in. Incentive payments are a means to help facilitate an end and I don't believe that we yet have a clear vision about what that end is. So in some senses I think that we're getting the cart in front of the horse to talk incentive payments. It's different with the question about grants, which James has dealt with. But I think from the commission's position what we've said, including the last point in our submission, is that we don't yet have a clear view about the case for reform, further work is required there and we're pleased to see it happening. When we understand the full case for reform, we'll have a better sense

about what's required to go from where we are now to where we need to be to achieve the objectives of the reform. Once we've established that pathway, we can look at how we might best move there and encourage the jurisdictions to do so.

In our mind, to talk incentives is a long way ahead of the game. I mean, ideally we would be able to see if a case for reform is there and is compelling and we can get broad agreement around it and lay out a logical sequence of reforms that realise full benefit to the community. When considering all costs and benefits, if the total returns are greater than the costs of reform, then I can't see why you would need incentive payments.

DR CRAIK: Why don't you assume that the PC has established a compelling case for reform in our draft report and then the question we have to address is, in the draft report do we need something to encourage it to happen?

MR FARGHER (NWC): I think we're speculating on a hypothetical and I don't think that we are in a position to do that and nor should we try. If we see a compelling case for reform, we'll have a much better understanding of what would be required to go from where we are not to achieving that vision and then we can talk whether incentive payments might be appropriate.

DR MUNDY: So it's conceivable that there may not be a compelling case for reform?

MR FARGHER (NWC): I think what we have said is that we suspect there is a strong case for reform, but that we need, if we're going to get the broad agreement of the industry, to understand and we need a robust evidence base for it.

DR MUNDY: Just coming back to the obligations of the states, the recent goings on in Townsville. They don't seem to be interested in tariff reform, despite the fact just about everyone else is. Is this a big problem for the evolution of policy if a substantial regional city decides to hold out against nationally agreed reform agendas?

MR CAMERON (NWC): I think consistent with the argument that I made earlier in relation to water recycling, that where you might have a lack of preparedness to even contemplate certain things in some areas, that does potentially open the door for other parts of the country to take a similar approach. So certainly from the commission's perspective, we believe that the reform commitments that have been committed to through the NWI and through more recent COAG processes should be delivered on by all parts of the country and we seek to expose the performance of jurisdictions in delivering on those commitments through the various processes that we have in place.

DR CRAIK: Can I raise a question about some of these sewer mining, grey water reuse and use of rainwater tanks and those things. The 2009 biannual assessment suggested there's been a considerable increase in those sorts of things and they're consistent with the NWI support for more integrated water cycle management. Is there a bit of a danger that taking a "more is better" approach to these alternatives will result in projects that have a very high cost, but low environmental, social and financial benefits being implemented?

MR CAMERON (NWC): I'm not sure that we would characterise our assessment as simply "more is better". I think the commission's view is that in order to meet the water needs of the future in our communities, that what we need is a portfolio of options on the table and that part of that is an enabling of innovative and often small scale options that can emerge as a market system starts to evolve. So I would accept your point if there was a preference given to particular options, but from the commission's perspective, we don't believe that there should be a particular preference given to supply or demand management options, but that they should all be considered fairly and where third party entry is possible, then that provides another mechanism for people to pursue particular models where that makes commercial sense.

DR CRAIK: Do you think some jurisdictions have gone down that track with things like BASIX in New South Wales, for instance, or compulsory rain water tanks in new houses in - - -

MR CAMERON (NWC): I think again often what we haven't seen is a transparent and clear articulation of the costs and benefits of those options against alternative possibilities. It's for that reason that we believe that there is a question about - and that starts to introduce the question of local authorities and urban planning arms of government, as opposed to water utilities - the extent to which all those institutional arrangements are operating to give the community a level of confidence that when they're investing in one alternative, that that is the most efficient option available.

DR MUNDY: The biannual assessment encouraged COAG to publish guidance on water planning in the presence of climate change and how to go forward on that. Are those guidelines being produced by yourself or some other agency? Who is supporting COAG on the production of these guidelines?

MR FARGHER (NWC): The COAG planning principles that - - -

DR MUNDY: Yes. The climate change related ones.

MR FARGHER (NWC): - - - have been released include some provision for consideration of climate change scenarios. We'll be looking at the planning principles as part of the 2011 biannual assessment, so we'll be reporting that issue.

DR MUNDY: So those guidelines have been published, have they?

MR FARGHER (NWC): Yes.

MR CAMERON (NWC): Yes.

DR MUNDY: Just coming back on this assessment of options, would you see merit, perhaps similar to the contract planning guidelines, in the promulgation ultimately of some agreed assessment framework to assist utilities and local governments, because part of the problem I suspect local governments are going to have is ultimately getting the intellectual wherewithal to actually produce a set of assessments. So do you see any merit in the production of a template, if you like, of how to look through these things which could facilitate that?

MR CAMERON (NWC): The short answer, I think, is yes, (a), for the reason that you've articulated, which is that smaller communities may not have the capacity to develop them themselves and certainly the commission is in fact funding a number of projects that are looking at supporting the analytical tools which would underlie an assessment of the optimal approach to supply management. But I think that raises a broader question of the relative role of planning versus markets in addressing these sorts of issues and I think one of the open questions - and it's not necessarily a question which can be answered the same was in each jurisdiction or in each urban centre - is the best way of managing a planning framework without discounting the possibility of using market arrangements and new competitive arrangements to actually address some of the supply or other requirements that are there.

MR FARGHER (NWC): One thing that your question does touch on, I think, is recognising that the optimal mix of reforms will vary from place to place and across scales. How do you move through that decision-making process? An assessment framework may be a useful series of steps, but I think it is worth considering how that optimal mix of reforms will vary. Again, as we noted in our submission, that's where we see this inquiry having the potential to help walk us through some of those steps in different locations. I think we have seen a clear reference to options being developed through this inquiry and I think getting an understanding from jurisdiction to jurisdiction on how these reforms will differ, depending on the current underlying conditions and the starting position in a whole range of areas, would be a good value add.

DR CRAIK: I'll just ask you about water pricing. Does the commission have a view about the most desirable tariff structure?

MR FARGHER (NWC): I'll refer you to our pricing position statement, which is available on our web site. However, I would foreshadow that we've got work under

way to consider the progress by the jurisdictions against the pricing commitments under the NWI. While our position is given in our position statement, which you can get from our web site, we are looking now, I guess, at a broader range of options for pricing to see whether pricing can do more to help with this optimisation question. So I can't foreshadow where we'll land on that, but it's clearly part of our consideration and that will include giving consideration to greater use of externality pricing and scarcity pricing in whichever form you want to consider it now. So I guess I'm foreshadowing that perhaps our position could be updated next year and I think it is worth considering.

DR MUNDY: In forming that view, are you having work done as to how elastic water demand actually is? I mean, there's obviously a range of academic literature around Sydney Water and evidence this morning indicated that perhaps the elasticity of demand certainly for water in Sydney might be lower than what had previously been thought, particularly if the current level of demand reductions out of the back of the drought seems to persist over time, which would you lead you to the view that demand is probably now less elastic than it was at higher levels of consumption. Is that a piece of work that you're having done to inform that updated position statement, what is demand like in elasticity terms?

MR FARGHER (NWC): Yes, I think that's an important consideration. I'm hesitant to say too much more about that project because it is under way. It falls within the scope. That question falls within the scope.

DR MUNDY: So you're looking at the elasticity of demand for urban water services.

MR FARGHER (NWC): Elasticity of demand will be considered in the scope of that consultancy.

DR MUNDY: I'm merely asking for the existence of whether the work is being done. I guess my second question is is it being done on a jurisdiction by jurisdiction basis because the elasticity of demand for water in Hobart, for example, might be a bit different to what it is in Perth.

MR FARGHER (NWC): We are working through using various case studies and examples, I guess, to show how there are differences in that and how that will come together, but, as I say, that's a piece of work that's ongoing at the moment. We haven't done - - -

DR MUNDY: I'm interested in the scope of the work, not the outcome.

MR FARGHER (NWC): We still have some way to go with that, so that's about as much as I can say on that one.

DR MUNDY: That's fine.

DR CRAIK: We should wind up. I've just got one question before you go. What work have you done on water in indigenous communities, the equivalent of urban - - -

MR CAMERON (NWC): We have supported a number of projects that provide practical guidance for indigenous communities in remote areas about how they can develop and manage their in-house water supply arrangements and we can certainly provide you with - - -

DR CRAIK: I think if you could, that would be very helpful. Trying to get information in that area is tricky.

MR CAMERON (NWC): Yes, and it's been a project which has been picked up by the World Health Organisation and the Canadian government as a model that they are replicating more generally internationally.

DR MUNDY: Climatic conditions for indigenous people in Canada - - -

MR CAMERON (NWC): They'll be a bit different, but the underlying questions of addressing health and safety are similar.

DR CRAIK: You could say that they're extreme, that's the common factor. Thanks very much for the submission. We'll look forward to the work that's ongoing as it comes off the line and I'm sure we'll be discussing these things further with you. Thanks a lot.

MR CAMERON (NWC): Thank you.

MR FARGHER (NWC): Thank you.

DR CRAIK: Now we have Prof Quentin Grafton from the ANU. If you could state your name and your position for the record and then if you have a brief opening statement, we'd be happy to hear it.

PROF GRAFTON (ANU): Thank you. It's Prof Quentin Grafton, professor of economics at the Australian National University. Thank you for the opportunity to make a submission and to be recorded today. I wanted to refer to the submission that I made that's available on the web site, but also talk a little bit more broadly about some of the issues associated with urban water. My focus in terms of the brief in the next five minutes is basically focused on pricing. There are lots of issues associated with urban water that need to be addressed, but my focus is on pricing. So I call it dynamically efficient water pricing.

So it has two components to that. The first bit is the "dynamic" and the "dynamic" emphasises there needs to be flexibility in the pricing. What I mean by "flexibility" is I mean the pricing adjusts to supply in terms of the availability of water for urban needs. The other component is efficiency and by "efficiency", we're talking about maximising consumer welfare over time or the expected consumer welfare over time. If we can combine both of those things together and do so in an effective way, then we can offer benefits to consumers and I think ultimately to tax payers, given what's been happening in Australia in the last few years in terms of very large investments, in particular in desalination.

So the first thing I want to briefly talk about are some myths, because there are a lot of myths out there. I'll just go through three of them and then I can briefly talk about dynamically efficient water pricing. The first one is that the current regulatory pricing system is efficient and that it's equitable. It's neither. In my brief and information and documentation I can provide to the Productivity Commission, I can show that the pricing system that we currently have in Australia actually imposes very substantial costs on households.

Those costs are in principally two forms. One is the cost in terms of mandatory water restrictions when we actually have low amounts of water availability, which has happened in the recent past. The second component is the investment component in the sense that if we have inappropriate or inefficient pricing, which we currently have, then that brings forward supply augmentation and that supply augmentation in Australia at the moment is expensive, so you pay higher prices ultimately as those fix costs come into play.

The second thing I'd like to talk about is the false belief that dynamically efficient water pricing is inequitable. Just to be clear, what dynamically efficient water pricing does, it tries to maximise consumer welfare. That's an aggregate measure, but it tries to maximise consumer welfare, so it's trying to do the best by consumers, so in that sense it's, by definition, efficient. But the issue that's been

raised is about the equity issue. One of the equity issues that's been raised is that - and I'll talk more about this shortly - prices will go higher as the amount of water in the dams reduces. So that means you'll pay higher prices in periods of drought. No question about it. That's exactly what it's intended to do.

Then the concern has been low income households, for example, will have to pay higher prices and that's difficult for them. The water bill as a proportion of household income is about 1 per cent and for low income households it could be 3 or 4 per cent, so it could be three to four times higher for them proportionately in terms of their burden. But what we really want to look at is of course the alternatives. Any method of pricing of course that people have to pay is going to involve costs. The issue here is it less equitable than the current system. I think there's some strong evidence to suggest that it's actually more equitable than the current system, and I'll explain why: because under the current system, when there is insufficient supply for a sufficiently long enough period of time and because prices are not flexibly upwards as supply goes down, the only alternative available after we've exhausted mandatory water restrictions is supply augmentation.

When we supply a demand of course - and they're multi-billion dollar augmentations that have been taking place in various cities in Australia - then of course those costs are built into the price. So if you look at the Sydney pricing right now, the pricing that households pay now is over $2 a kilolitre. If you look at the pricing that they would have paid if they had followed a dynamically efficient water pricing path that I've done with my colleague Michael Ward, they'd be paying about $1.60 a kilolitre, so in fact they would be paying less now than they currently are. They would have been paying more in the past in the periods of the drought, but overall they would be paying less.

The other issue of course is who pays what, because in the case of mandatory water restrictions, a lot of that burden falls on single-dwelling households. So, in other words, they've got gardens, they've got some landscaping and of course they have to incur restrictions in terms of their water use. For people living in apartments, they actually don't face those restrictions or face them in very minimal ways. So when the pricing increases because of supply augmentation under the current system, then who ends up paying? Everyone ends up paying more, including in the apartments, but the apartment-dwellers haven't suffered the costs of mandatory water restrictions, but now are incurring higher costs and sometimes substantially higher costs associated with the supply augmentation. They are, no question, worse off. The single-dwelling households, they may also gain in the sense that mandatory restrictions could be lifted, so they will have some welfare gain plus, of course, the high prices. So it's hard to say which way it will fall, depend on the household. But clearly the apartment dwellers are going to be worse off. If you look at incomes and wealth issues you can look at apartments versus single-dwelling households and make your judgments.

Then the third point is - this was addressed to the questions that were directed to the National Water Commission - is that our pricing structures, like dynamically efficient water pricing, are they effective in the sense that can they actually reduce demand? The answer to that is yes. The false belief that they cannot is in fact - is a false belief, because we can look at a whole range of studies looking at the price elasticity of demand. Now, it is the fact that the price elasticity of demand is inelastic, so we have to raise the price proportionally more than the proportion we'll expect in reduction in terms of demand, but nevertheless they're statistically significant parameter estimates that we've had in Australia and all sorts of places in the world. So pricing will work. It is a factor.

The other issue is that the alternative, which is what we practice currently in Australia, is mandatory water restrictions, that they impose negligible or minor welfare costs. Well, in fact studies that I've done with my colleague Michael Ward indicate that those costs are substantial. So $150 a household in Sydney, for example, in one year alone, 2004-2005. Productivity Commission used that work in their report that came out a couple of years ago to estimate approximately that those costs on an annual basis were about $900 million a year in Australia. I don't consider that to be trivial or minor. I think those are substantial costs. When you look at the alternatives, and there are alternatives, dynamically efficient water pricing, it seems to me we need to seriously consider those alternatives to improve consumer welfare.

So just - that's a quick review of some of the false beliefs out there, some of the myths. Just to spend the next minute or so, if that's okay, just to briefly talk what dynamically efficient water pricing actually does. Well, it's a pricing system that incorporates flexibility. So what I mean by that is if we have substantial water storages for our urban communities, which we do, then as those water storages decline over time, for example, in a drought, then the price will adjust based on the amount of water in storage. So as the storages go down the price will go up. It will go up, let's say, on a quarterly basis. It could be done on an annual basis but it could also be done on a quarterly basis, given that's how water bills are paid by consumers. That pricing takes into account the weather events that we've had in the past.

So in other words, if we have an expectation that there will be major inundation every 12 months it would make sense, for example, in this approach to have prices going up to reduce demand so that we could then postpone any supply augmentation that was expensive. So you can adjust your prices based on storages taking into account what you would expect the weather events to be. Of course it's an adaptable approach. As the water storages keep on going down then your prices keep on going up. The way I would suggest this could be implemented is that you'd have some sort of band in terms of where you would lie. So even if storages were 100 per cent full there's probably some point that you wouldn't go below and then as storages go down you'd have some bands that people would have been aware of.

Those pricing bands would give you an indication of where those prices would be heading. The actual prices would be determined based on the conditions that you would have at the time. That pricing system, of course, allows demand to adjust to the changes in prices and it allows water authorities, the state governments, to postpone the supply augmentation and can do so in an optimal and efficient way. Thank you.

DR CRAIK: Thank you. Thanks very much, Quentin. Thanks for your submissions. We had Sydney Water here this morning and I guess they've made a couple of points and I guess I'd be interested too in your - I assume - I've explained to Sydney Water that you've got a system from - where the price of water could be cheaper than it currently is and we'd be interested in their reaction to that. But Sydney Water has indicated the community appears to have a preference for restrictions as opposed to increasing prices and that in terms of what's important to communities, first issue is value for money; secondly, water efficiency; and pricing is less of an issue in terms of how much water they use. I mean those other things, value for money, water efficiency and pricing are, in order, the most important things. They say price is actually very little of an influence in terms of how much water they use. I guess I'd be interested in your response to that and also given now that most of these places have a large desalination plant, does that affect - the level of water in the dam is one thing, but if everyone knows they have a desal plant just down the road they can link in, is that going to affect people's behaviour in terms of pricing and use?

PROF GRAFTON (ANU): Sure, all those are good points. Of course there are a number of factors that affect household consumption of water, not just pricing. So number of people in the household, the size of your lawn, your income, a variety of factors that will affect water consumption. That has certainly been identified in the literature. Unfortunately for Sydney Water they don't control the household size. Sydney Water can't control household income. They can't control garden size. However, Sydney Water, through IPART, can control the price. So it is a variable that is controllable and it can move up. Of course it only moves upwards in the current system but it could move up and downwards in dynamically efficient water pricing.

So what's the evidence? The evidence, it seems to me, is the evidence of actual behaviour rather then the direct survey method. So you'd have to ask to yourself, "Do you we have evidence - reliable, robust evidence - to indicate that water pricing has an impact on water consumption?" The answer is yes. That's true for Sydney. I've done the work for Sydney, I have the numbers for Sydney. But there have been numbers done in other cities - Canberra, for example, and Brisbane, for example - and there's studies, literally hundreds of studies, around the world that have looked at residential water demand. Now, those elasticities, as I pointed out in my opening statement - those elasticities are inelastic. So if you want to get a

5 per cent reduction in water demand then you're going to have to raise your price by more than 5 per cent. But that doesn't mean there wasn't an impact. The other thing - - -

DR CRAIK: Is that reduced now? Is that opportunity reduced now that people's average per capita consumption has declined significantly?

PROF GRAFTON (ANU): Not necessarily, because prices are higher. So the thing about elasticity is when you get these measures you're getting your point estimate but there are two aspects to those elasticities. The elasticity is likely to change the higher the price. So it's likely to become more elastic the higher the price, which we are getting much higher prices than we did five years ago.

DR CRAIK: Yes.

PROF GRAFTON (ANU): The other issue is the short run versus the long run. That's a bit hard to separate but there are ways to do it. So in the short run the price response will be less than the long-run response. That's because people will make adjustments and adapt to how they use the water in the household and indeed outside. So the fact that we've had a drought - which has now ended, which is great news - has had an impact on household behaviour. For example, people have changed the nature of plants that they have in their gardens, or they've put on plastic grass versus real grass, those sorts of things have happened. So they would have made adjustments downwards in terms of consumption and that, I think, is - it's quite clear those sorts of things have happened. But it doesn't take away the fundamental issue, and the fundamental issue is that people will respond to price. It's just a question of what that price is and how long that response - and how quickly that response will kick in. So long-run price elasticities are in fact larger than short-run price elasticities. The elasticities will tend to be higher the higher the price.

DR CRAIK: What is it about your work that Sydney Water doesn't seem to be convinced by, because they don't seem to be convinced that prices are - - -

PROF GRAFTON (ANU): Well, I don't know. I mean the evidence is categorical. Maybe the - I can't speak for Sydney Water.

DR CRAIK: No, sure.

PROF GRAFTON (ANU): I never worked for Sydney Water. But all I can say is that we could maybe have a debate about what the actual point estimate is.

DR CRAIK: Yes.

PROF GRAFTON (ANU): Depends on the data source et cetera et cetera. But

there's no way we can debate about whether there is a statistically significant price elasticity for Sydney, that's very clear - but we might have a debate about what that number is - so I think that is debatable. Why Sydney Water is not looking at dynamically efficient water pricing? Again, I can't say. But obviously I can see water utilities may be concerned by prices that are going up and down, in the sense that they are forward planning. Of course, what I am talking about here is a two-part tariff: there would be a fixed component in the tariff which would address some of the issues that are peculiar to a long-run, average-cost, declining over time sort of approach that we have in terms of supply in the water industry; but you would have a variable component based on a volumetric price that would be flexible up and down, and you can build in constraints about climates in terms of revenue thresholds.

You can also build in the issues about monopoly pricing. Because the way we have our pricing system at the moment, it is really focused on preventing monopoly pricing. Prices are too high, because obviously there is a single supplier and the consumers don't have much choice in terms of who they can get their water from. So you can build that into dynamically-efficient water pricing as well. Keep in mind what dynamically efficient water pricing is about; it's not about maximising the profits to the utilities, it is about maximising consumer welfare. So that is a key point. It seems to me, if you incorporate that as your objective, then you have already dealt with the issues of monopoly pricing.

DR MUNDY: But cost-demand is inelastic, then as prices go up revenues will go up and will lead to the regulator to have concern, even if in a controlled fashion. So you end up with buckets of surplus revenue which somehow needs to be stochastically spent over time, in the way we typically do regulated utilities pricing.

PROF GRAFTON (ANU): That's correct.

DR MUNDY: How would you see a regulator operationalising that? Because obviously you don't want the utility going back to the regulator every quarter, because by the time the regulator discharges his or her statutory duty we will be two quarters further down the track and any benefit of the pricing signal will be profoundly diminished. So how would you see that being operationalised?

PROF GRAFTON (ANU): I think you would have to operationalise it over more than, let's say, a three-month period, I think. Maybe over a pricing period of time of three, maybe five years. But you could operationalise it by having reductions in terms of the fixed charges that are paid by consumers, so that is a possibility in terms of returning revenues.

DR MUNDY: So you would say, basically, what the regulator would set ex ante would be perhaps a schedule that said, "The price will look like this when the dam level is that," so there will be a schedule and then to comply with the tariff order the

utility would simply turn to the schedule and say, "The dam is 25 per cent full therefore the prices shall be - - -"?

PROF GRAFTON (ANU): That's exactly what I'm saying. So those would be announced ahead of time. There would be bands, because there may be new information getting updated as we go along on that plan, so they need to have some flexibility, but there would be these bands, price bands, basically, as you are saying, based on the amount of water in storage.

DR CRAIK: That's pretty much how the water restrictions here in the ACT have - isn't it on dam levels?

PROF GRAFTON (ANU): Yes, that's right. So it seems to me that is the way you would do it. Part of the process, of course, is consumers have to be informed of what is going on. There is strong evidence from other parts of the world that there is some confusion sometimes in water bills, because there is a fixed charge, a volumetric charge, sometimes an increasing block tariff, and then there are other components to that. So it seems to me you would want to make sure that dynamically efficient water pricing is built more directly in, so it is quite clear what you are paying in terms of this current period, which could be a year, it could be three months. There are information campaigns that we could have as we drive along and we see how much is in the dams. We could have those sorts of things and make it clear to people that prices have gone up, and they have gone up simply because there is less water in the dams. This is a system to try to, basically, provide the most benefits, over time, to consumers.

DR CRAIK: Do you think there would be a need to change other institutional and governments' arrangements around introducing dynamically efficient pricing, and do you think there would need to be some kind of basic water allowance or basic level allowance, whatever that might be?

PROF GRAFTON (ANU): It's certainly possible. I'm not in favour of increasing block tariffs, but it is certainly a component to address the equity issues, if you were concerned about that. So it affects quantity, per person per household or per household, that is charged at a lower rate. But that would have to be, I think, truly a basic needs level, and at that point I don't think it would be problematic. At the point beyond that you would have that variable volumetric pricing. There has been work done recently in Europe and France looking at that, between discretionary and non-discretionary quantities of water, and they are looking at that sort of thing. I think they have got about a 100, approximately - it depends on the department in France, but it is about 100-odd litres per person per day. I think that is the sort of numbers they have got.

But in terms of the regulations, obviously I am not a lawyer, I am not qualified

to talk on that, but it strikes me that the way they, as far as I can tell from those regulations that various pricing tribunals and authorities have, they would have to change. They would have to change to take into account the sorts of things that I am talking about, but they could still continue to exist. But in terms of mandate of how those prices were set, it seems to me, would have to take into account that flexible pricing would allow prices to go up substantially, but within the sorts of things that we have already talked about. In terms of what happens to those revenues and how those revenues go back, it seems to me, that could be accounted for.

Then there is another way to do it without even changing regulations, which I think is a second-best approach, but the ACT government has a water extraction charge. So it is possible, for example, that territory or state governments could impose an abstraction charge that would be, obviously, zero when you have sufficiently large enough water in storage, but it could become positive.

DR CRAIK: The ACT is a fixed one, isn't it?

PROF GRAFTON (ANU): Yes, it is, and it is not set up in this way at all, but you could potentially set up a water abstraction charge that was based on dynamically efficient pricing and that would then provide revenues that would go into the state coffers or the territory coffers, and then that money could then go back to water consumers, or not; you could hypothecate them or not. But that is another way of doing it. I think that would be a second-best approach. I think the best approach would be to set up a system where you have got good discussions between the pricing regulator and the water utilities, discussing about the costs, et cetera, and banding, and then make those determinations at that time.

DR CRAIK: Do you think the major benefits from that sort of dynamically efficient pricing come from the supply side of things, the supply augmentation side or the demand management side?

PROF GRAFTON (ANU): I think they come from both. The numbers we've got in Sydney are surprisingly large - or surprising for me how - we are talking about, if you had taken an optimal approach, efficiently priced your water, and then efficiently made your determination in terms of your supply augmentation, we're talking about present value terms of a little less than three billion dollars. It's present value terms. So that works out at a little more than four times the annual water bill of a household, per household. So those are substantial amounts of welfare loss from not doing that.

Mandatory water restrictions clearly impose substantial cost, and that's generating a good part of that. The other component, as you said, is in terms of the supply augmentation decision. It is quite clear from our analysis that the supply augmentation decision of building a desal plant, or at least signing the contract on it in July 2007, was an inefficient decision. It was not the right thing to do and the

analysis certainly shows that, and that is imposing substantial costs now on water consumers on Sydney. It didn't need to be built at that time and part of the reason it was built is because we didn't have dynamically efficient water pricing. So it is a chicken and egg, but if you don't have the right pricing system in, then you don't have the appropriate demand; demand and supply aren't balanced and therefore you bring forward that supply augmentation.

Unfortunately for Sydney, Gold Cost, Melbourne, Adelaide, and now Perth, now with its second plant, those sorts of decisions weren't taken using dynamically efficient water pricing. All I've done is the analysis in Sydney and I have indicated there are very substantial welfare losses from that decision, and it didn't have to be that way.

DR CRAIK: Given the community's strong support of restrictions and even their support that they would be prepared to pay more to stop other people paying more to get more water to buy their way out of restrictions. It seems that the community attitude issue is a really interesting issue. If we were to go to something like scarcity pricing, the community at this stage doesn't seem to have, you would have to read into it, wild enthusiasm for that sort of approach. I don't know if you have a view on that.

PROF GRAFTON (ANU): I do have a view on that. I don't do surveys.

DR CRAIK: No.

PROF GRAFTON (ANU): We can dispute or debate the surveys that have been done by vested interests. But I mean it's quite clear that consumers don't want to be paying higher prices if they can help it. The responses that we've seen in the recent past in Victoria and other places about high water prices is a reflection of that. Of course people don't want to pay more for something that they were previously getting at a lower price. But I mean people have to - it has to be explained to them. People don't want to go to the petrol pump and pay 50 cents a litre more for their petrol, of course they don't, but they have to understand that it's a supply and demand issue and I think that has to be pointed out to them.

I think they also have to - it has to be explained that there is a gain here, because when I was presenting these results back in 2007-2008, always the response to me was, "Well look at his price," that's the dynamically efficient water price, "Look, it's over $2 a kilolitre." The current price at Sydney at the time was $1.01 a kilolitre. "Why would you want to go with this guy, you can go with us." Well, actually now the tables are turned. In November 2010 households in Sydney are paying over $2 a kilolitre and our price is about $1.60 a kilolitre. So that's the sort of thing that has to be explained. It also have to be explained that prices can go up, of course, but they can also go down. In the current system they never go down. I

mean it's all about informing people, getting them to be part of this process.

When you say that a lot of people are in favour of mandatory water restrictions, well, most people don't want to have mandatory water restrictions but they also want to do the right thing by their community. So doing the right thing by the communities is having higher prices which affects consumption which then allows them to use water in ways that I think are favourable for them. I mean there are all sorts of stories about people who have hurt their backs trying to take out buckets from the - you know, all those sorts of unreported sorts of things. The welfare costs of that I think are substantial. So I would argue that this can't just be implemented overnight. It has to be discussed, debated and talked through with the community. But it seems to me that it's eminently doable and feasible, given the appropriate leadership.

DR CRAIK: Okay, thanks, Quentin. Do you have anything else?

DR MUNDY: No, I'm fine.

DR CRAIK: Okay, thanks, Quentin. I think we've finished. Thanks very much for your submission.

PROF GRAFTON (ANU): Thank you.

DR CRAIK: Thanks very much for coming along today.

PROF GRAFTON (ANU): Okay.

DR CRAIK: We appreciate that, thank you.

DR CRAIK: Our final person appearing today is Dr Terence Dwyer. Terry, if you could say your name and position for the record and then if you'd like to make a brief opening statement we'd be happy to hear it.

DR DWYER: Yes, it's Dr Terry Dwyer, I'm a solicitor, a practising solicitor, and a visiting fellow at the Crawford School of Economics and Government at the Australian University. In making this opening statement I'd like to state, firstly, that obviously what I'm expressing are my own opinions, and they are opinions. However, I think they are considered opinions, having been involved in the microeconomic reform debates since the 1980s, both within government, within EPAC, outside it, having represented consumers in regulatory hearings.

Having written on the subject over the last 20 years I think I know a little bit about it. But my considered opinion is frankly that water reform in this country is a fraud. It has been a fraud on the public, it has been a fraud on economics, it has been a fraud on legal process and a fraud on Constitution. I am willing to back up those opinions with detailed statements. It has been a fraud on the public insofar as the public has been led to believe that water should cost more when in fact the cost of obtaining and collecting water and delivering it to taps - the operational cost is very, very little and most of the costs have been sunk and paid for by previous generations.

It is a fraud on economics in that marginal cost pricing principles have been totally trashed. Adam Smith, John Stuart Mill, Harold Hotelling, William Vickrey are turning in their graves as they watch the inflation of cost by accounting manipulations designed to create fictional costs, fictional capital values upon which fictional returns are demanded.

It is a fraud on legal process in that consumers have no chance of challenging this. They think, in their stupidity, that regulators are there to protect them, without realising that regulators are hopelessly compromised. I have in my possession a letter from a regulator, an email. When I wrote complaining about the vetoing of new dams he wrote back saying - and I can't divulge his name, he'd lose his job - "Yes, I agree, dams are much more efficient as a source for augmenting water supplies but if our political masters have vetoed them in their wisdom we must set the price at five or 10 times more to justify investment in desalination plants or whatever."

It is a fraud on the Constitution in that what we now have through water pricing is a vast system of indirect excise taxation which the Constitution reserves solely for the Commonwealth. The disguised taxes levied in the forms of compulsory dividends to state treasuries are fundamentally unjustified. In the ACT we have the added insult of the water abstraction charge allegedly imposed for scarcity but which of course has not dropped as the dams are overflowing, which shows the ultimate in fraud. That is my considered opinion and that is what I'm

willing to be questioned on.

DR CRAIK: Thank you. Thanks very much, Terry. Is this view of yours about water reform in Australia, is that to do with the ACT, because most of your writings I've seen are to do with the ACT, or do you actually regard it as an Australia-wide phenomenon?

DR DWYER: No, it's general. Years ago when Sir Eric Neal was commissioned by the Council of Australian Governments to embark on this water reform I said to him at a Victorian Farmers Federation conference - I said, "You are being the stalking horse for Treasury's revenue raising." That is a view I think that has been amply justified. I hope Sir Eric is looking at this from his grave and enjoying it.

DR CRAIK: Given the views that you've expressed, do you have a view on what should be done to reform the sector to overcome some of those issues? For example, the suggestion about say an independent supply procurement entity where there is a need for further supply. Do you think that's a preferable way to go? I mean I ask the question generally and then - - -

DR DWYER: Well, I think the trouble is we lost sight of how water should be provided. You've obviously got natural monopolies. The system for Sydney Water and for the Melbourne Metropolitan Board of Works was that essentially they were federations of ratepayers designed to secure water at least cost for the public health and safety. I think the motto of the Melbourne Board of Works was salas mea publica merces, ("public safety is my reward") was the motto of the Melbourne Metropolitan Board of Works. We have to remember that clean urban water was fundamentally brought into this country as a function for public health reasons.

The way it was done in Sydney - and I've got the history of the Sydney Water Board, it was published in 1937, written by F.J.J. Henry, who was the secretary of the Water Board. It's a very interesting history but the idea was that essentially the object of economics is not to maximise profit. The object of economics is to annihilate cost, to have as much as you want at the least possible cost. Therefore you can think of the water boards as they used to be as collective buying, as procurement organisations acting in the interests of the consumers. The conflict of interest between monopoly and the consumer was resolved very intelligently by making sure that the consumers were, through their councils, actually in control of the supplier. Whereas now, what we have is the situation where these bodies have been corporatised by state treasuries and the farce has been created that state treasuries ever paid for them.

In about - I think it was the 1880s, maybe 1888, the state treasury sold all its water assets to the Sydney Water Board for something - I'm trying to remember, 100,000 pounds or something like that. From 1888 through to about the 1980s the

state treasury did not invest one single cent or penny into Sydney's water infrastructure, it was all paid for by ratepayers through their land rates. They created Warragamba Dam. I remember as a boy going to get school suits and seeing advertisements for water board loans. The Sydney Water Board would levy the ratepayers who expected to get their water served to them. It would levy them and it would take out loans and pay off the amortised loans through the rates. So it was not the state government; it was the ratepayers of Sydney who built all this marvellous infrastructure.

Then of course in the 1980s the state government decided to corporatise it. The ratepayers lost any rights they had. It now became a statutory corporation and the Treasury said, "The replacement cost of these assets are worth five billion," whatever it was, "We're entitled to a dividend on that." As Adam Smith remarks, men love to reap where they never sewed and the state treasury is a classic example. Having invested nothing in creating the water infrastructure of Sydney, state government saw it as a hollow log to be exploited for revenue purposes.

A friend of mine, who is now deceased, used to work for the New South Wales Treasury, and he commented that they used to talk in the Treasury of the chaps who went out to the statutory authorities as the Mafia. They went out with black bags to go and collect the cash as protection money. People know what's going on who actually know about it. By the way, I notice that in this list of witnesses, I'm the only one here who, as far as I can see, is just an unrepresented member of the public, so I'm glad to be here. But the point is that the old system of cooperative supply through funding by rates was actually very efficient. It was a perfect two-part tariff.

That's where the industry commission made a huge mistake in its 1992 inquiry. It basically admitted that if you took the rates off for water, that rents would rise, so basically land-holders got a free windfall and water consumers got no reduction in their costs. I wrote a paper with another chap, Terry Larkin, on re-focusing microeconomic reform back in 1995. I'll give you a few pages from that. I think it's out of print. But basically we went through the economic theory of this and pointed out that in fact the industry commission had not realised the rating system represented a perfect two-part tariff.

You have a lump sum charge based on the value of the land serviced. Let's face it, the value of the land serviced is not a stupid criterion. How much do you think a block of land in Sydney would be worth if it had no water supply and you put a 50-storey building on it? Nothing. If you can't supply water to all floors, it's worth nothing. So the system actually was a form of taxation according to benefit. The industry commission in 1993 in its annual report at p.180 recognised that pricing at marginal cost does involve a loss in decreasing cost industries and it said, "All we're talking about is the system of taxation." Once you realise that, then the most efficient form of taxation is rating the land, because you recapture the externalities

that you have added to the land values through the provision of public infrastructure.

The word "infrastructure" in Latin means "things built into the land". What is more natural than to rate the land values you're creating through the provision of public infrastructure to recover the cost of the external benefits you're conferring. That is perfectly efficient. What Australians do not understand is that we had a better system than the Americans and because our students do not understand our own history, because they're not taught it, because they read American textbooks from a system of regulated monopolies, they actually do not understand that we solved the two-part tariff problem, we solved the problem of providing water at marginal cost.

The problem we had of course is that we didn't supply it perfectly at marginal cost because we had further bedding. We had unions and governments wanting to bust up those things and so on. But in fact we replaced unions having three-hour lunches with treasuries extracting dividends on investments they had never made. So I'm not sure that the last state of man is better than the first.

DR CRAIK: So where do we go from here?

DR DWYER: We go radically backwards.

DR CRAIK: If you had your druthers, where would we go from here?

DR DWYER: Basically what I would do is I would vest the water assets of the cities of this country in public charitable trust, which you can do, a public charitable trust to provide water as a necessity of life to people. I would insist that those trusts not pay any dividends to government or anything else; that they operate on the basis of recovery of actual costs - not inflated or notional costs, not replacements costs, their actual costs - that they proceed by being given powers to rate the value of the lands they service and that they be allowed to get on with the business of building dams.

Take, for example, the Shoalhaven Dam. The Shoalhaven Dam is shown in the history of the Sydney Water Board as a Sydney catchment in 1937. Bob Carr vetoed it and he announced Sydney's desalination plant, I believe, when he was wading through floods in Lismore. Nobody commented at the time on how idiotic that was. I mean, the cost of a desalination plant would have amply paid for building a dam up in the Clarence and pumping the water even more hundreds of miles and nobody saw the irony of it.

The Mitchell and Macalister rivers were marked by the Melbourne Metropolitan Board of Works for feeding across to the Thomson and the Upper Yarra dams. In fact the Melbourne Metropolitan Board of Works had a plan. There

was a letter in the Melbourne Age a couple of years ago written by one of the former members. They had a plan to stop the flooding of rivers in Gippsland, get the water across to the Upper Yarra dams and then put the excess back into the Murray-Darling. But, lo and behold, what do we see in Melbourne? No dams in Gippsland, the rivers flood. They flooded so much that the carp got over the weir and up the river and Lakes Entrance was flooded and Melbourne is now pulling 90 gigalitres a year or so out of the Murray-Darling basin. We've got rid of a scheme to put water into it in favour of a scheme to pull water out of it at far greater cost.

Melbourne is building a desalination plant and Sydney has a desalination plant where the people of Sydney, my home town, now have to pay through the nose for the privilege of drinking recycled sewage because the silly buggers put it within two and a half kilometres of a sewer outfall. If people think that you can recycle sewage and get every possible known virus, I've got some news for them. Go and talk to Dr Peter Collignon, who is an expert in this area, and he will tell you - and he's said it publicly - that there are many viruses and diseases you cannot screen for and by the time you know they're there, it's too late. A lot of these things will not show up to suburban doctors.

People will have morbidity, they will suffer unease, their immune systems will be compromised and then they will fall prey to other diseases, such as cancer or autoimmune disease, MS or whatever. Basically there's nothing like having had cancer to teach you amount immune systems, but people do not understand this, that we have basically hopelessly compromised public health in Sydney at huge cost to the public and the poor buggers don't know anything about it. They have my sympathy.

DR CRAIK: There will be, very likely, situations where no further dams are possible in some areas. Certainly in the Murray-Darling no water had run to the sea for eight or 10 years or something. For example, in Western Australia, Perth, as I understand it, doesn't have any further dam-like options, so presumably you're not against things like desal plants when there aren't any other options.

DR DWYER: No, I'm saying when you have exhausted your other options, but the truth is in New South Wales and Victoria, you certainly haven't, and in Brisbane you haven't. It was a political decision to veto Brisbane's dam. It is a political decision not to have more storage. If people want to say, "We will never have dams. We will never tap ground water. We want to have expensive water," if they want that and they're willing to say that's what they want, then all you can do is shake your head and say irrationality knows no bounds. But I don't think that's what people really want.

I think people have been brainwashed through a campaign based on ignorance and in fact when you really talk to people, some of them say to you, "Why should it

cost so much for water? It falls from the sky. I can catch it in a rainwater tank." Look at rainwater tanks. How ridiculous. In Canberra 100,000 rainwater tanks would cost you maybe a couple of billion dollars. For that amount of money, you could build five dams, six dams. You could build the Coree Dam, you could build the Tennant Dam, you could gold plate them, you could link them all up and you could have a diversion from Murrumbidgee, et cetera, et cetera. In terms of gold plating, perhaps the best way to think of rainwater tanks is mini dams. I mean, if it's all right for 100,000 or two million people to individually intercept water and collect it, why isn't it all right for them to do it collectively at cheaper cost? The advantage of doing it collectively is you have more social control. You can take account of environmental flows. I mean the fallacy, I think, that has happened is that people have thought that wanting environmental flows for rivers means that you should not have more dams, whereas the logic is if you want more water to release for environmental flows as well as for human use, then you need more storage to sustain it, given the wide variability in this country of drought and rain.

DR CRAIK: So are you in favour of - the point that has been made certainly by others that whatever institution is deciding the next water supply, should one be needed, that all the options ought to be on the table - the costs and benefits of all the options ought to be on the table and publicly transparent?

DR DWYER: Absolutely, and they have not been. In fact, they've been carefully taken off the table by political negotiations by governments wanting to pander to what they see as the green or eco vote. In fact, I am a greenie in the sense that I like a green Canberra, which is why I do not like water restrictions. One of the tragedies of this town is that it was designed to be a garden city. When I first came to Canberra I was told that we would never have water restrictions in Canberra because the dams were built to accommodate a population of 450,000 people at 1960s level of per capita consumption and now we're only about 330, 350, and we've had chronic water restrictions, so trees galore have been killed.

I wrote a letter to the Canberra Times commenting were water restrictions still in force as a subsidy to tree choppers? Were they there because the people of Canberra were terminally stupid? But the truth is Canberra was designed to be a garden city. Its water catchments are adequate to supply a million people. The real problem has been they started to empty the dams with much greater environmental flows without considering the impact on the ability to supply the population. If they want to keep emptying the dams then build more storage, not have less, and they'd be able to do it. That was the suggestion I raised back in about - I think it was 2002 at the first water consultation. You know, even the government's own reports in Canberra say that there is enough water here for a million people and the problem is storage, not an inadequacy of rainfall. Most people have been misled into the idea that the rainfall in Canberra has changed. It hasn't. If anything, over the last hundred years there has been a slight increase.

DR CRAIK: So would your view be that the water utilities ought to be these public charitable trusts, that they set the prices, that there's no independent price regulator, that these public charitable trusts make some rate valuation on properties, they set that as some kind of fixed charge and then there's a volumetric charge and it's all done by them, essentially? Is that your belief?

DR DWYER: If they're elected by the public and if they can't pay dividends and if they are required to rebate excess charges as discounts or rebates to volumetric charges and they're run as cooperatives, then they can't exploit you. I mean what I find amazing is how people who used to be middling sorts of public servants are now sitting on salaries of seven and eight hundred thousand or a million dollars. They think they're running businesses. They're running monopolies, it's nothing to do with business. Their rewards are based on their ability to screw the public. It has got nothing to do with economic efficiency.

DR CRAIK: Have your arguments won any sway in relation to that sort of a change of structure? Have you put them to governments and have they had any result?

DR DWYER: Governments are like donkeys, they will only react when they're kicked. I'm glad to see Sydney's Daily Telegraph has started to kick them, and I hope there's more kicking coming.

DR CRAIK: In terms of - what's your view about - well, you've given us some of your view about restrictions, I guess. Do you think that they should never be contemplated? I mean could you see the sorts of institutions you're talking about putting in place restrictions?

DR DWYER: Well, actually, Vickrey, as in William Vickrey, Nobel prize winner in economics, actually anticipated this in his discussion on scarcity charging and congestion charging. He anticipated there would be times when you needed to charge for scarcity, but he made the very good point - because he understood economic incentives he made the very good point that any scarcity charges should go into an escrow fund to be set aside for the sole purpose of augmenting the infrastructure; because when you think about the whole object of economics is to annihilate scarcity, not to profit from it. What we have done in our pricing system in this country is profit from scarcity as a subsidy to Treasury revenues.

His idea was that if, for example, dams are running low and you can't be sure of supply, yes, by all means charge for scarcity, but put it into a segregated fund so that you have it available to expand your supply, be it by a new dam, be it by groundwater, be it by desalination or whatever it is. But it shouldn't be used as a profit or revenue to the infrastructure owner, because then you in fact create a

chronic conflict of interest between economic efficiency and the private profit of monopoly owner.

In a sense I regard the corporatised state water authorities now as a corrupt - and I use that word in the institutional sense, not in the personal sense - as a corrupt and unholy alliance between state treasuries and the management of those authorities. The management of those authorities are being paid salaries they could never get in normal competitive industries. We've feather-bedded the management instead of the unions, we've feather-bedded treasuries. That's what we've got out of "economic reform" in inverted commas.

DR CRAIK: I just had another question, it has just gone out of my mind.

DR MUNDY: How do you think we should - there's some literature around suggesting that Australians place a substantial value on Kakadu National Park, even if they haven't been there. It's clear that there are substantial mineral resources that lie under Kakadu National Park and the commodity, through their elected representatives, have formed the view that that's an economic rent that we will forego because we place a higher economic value on the natural biodiversity of resources in that system. I mean your discussion about the building of dams is essentially that dams are a cheaper option because we can put up the dam wall, we can do all the works around it.

Presumably under your model you'd agree that the state or whatever entity would acquire the land at its market value. But what if there are other benefits that arise from biodiversity and other things that the community is interested in which would be lost? I mean there is a long and historic literature on the issues around irreversibility and economic decisions and it particularly stems out of the dam problem. So it would seem to me that there's a margin there of total economic cost over and above the physical costs of acquisition of the land and doing civil work. So I'm just curious how do you think that cost should be assessed, or don't you think that's a real cost at all?

DR DWYER: Well, these are interesting things, but I'll give you a counterfactual, and it's a true counterfactual. The Macquarie perch and two-fin blackfish would not exist in the Cotter River if we had not built a dam in 1915. The only reason the fish viruses have not got to those populations, fish populations above the Cotter Dam and in the Corin Dam in Bendora is because those rivers were dammed. In fact, there's an argument to be made that increased environmental flows, which everybody thinks are a good thing, have actually been a bad thing for the Murray Darling insofar as they have turned a river that would occasionally have run dry, as it did in the 1920s and 1890s, into an artificial breeding area for European carp.

So I don't think we know as much as perhaps we think we do. Now take, for

example, the Shoalhaven Dam, which is the last case of a dam which was vetoed for these alleged environmental benefits. The truth is the Shoalhaven was being pumped ruthlessly dry by the state government and they were pumping the water, I think, about 2000 metres up to Tallowa Dam and then running it across to Warragamba from the southern highlands. Whereas if they'd built the dam originally proposed, they would have at least had greater control over the flow of the river and they would have more water to sustain the environmental flow and they wouldn't have been wasting energy pumping water uphill. So I think they are legitimate concerns but I think the outright veto on new dams, which is what we've seen, is a political thing. It has not really taken into account any rational weighing-up of these costs or benefits. I'm in favour of weighing up all costs and benefits and looking at it rationally. What I'm objecting to is the vetoing of these possibilities.

DR CRAIK: I'm not sure I buy your comment about carp in the Murray Darling but anyway perhaps - I think we've come to the end of the time that we had allocated but I'd like to thank you very much for your submission, Terry. Yes, you are the only individual constituent here today, though we have one tomorrow in Melbourne as well. So we're pleased to see you and thank you for your submission and your comments and would appreciate - - -

DR DWYER: I'll give you a copy of that.

DR CRAIK: Yes, the paper that you're going to give us. So, no, thanks very much for that view.

DR DWYER: You're welcome.

DR CRAIK: Thanks a lot. That completes today's hearings, today's formal hearings. For the record, is there anyone else who wants to appear today before the commission? No? Well, I adjourn these proceedings and we'll resume in Melbourne tomorrow, November 30. Thank you. Thanks very much.

AT 2.45 PM THE INQUIRY WAS ADJOURNED UNTIL
TUESDAY, 30 NOVEMBER 2010