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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 ADELAIDE ON TUESDAY, 7 DECEMBER 2010, AT 9 AM

Continued from 30/11/10 in Melbourne

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DR CRAIK: Good morning. Welcome to the public hearings for the Productivity Commission inquiry into Australia's urban water sector following the release of the issues paper in late September. My name is Wendy Craik and I'm the presiding commissioner on this inquiry. The other commissioner on this inquiry 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 Adelaide we have met with interested parties and individuals throughout Australia and during October and last week we held roundtables in Perth, Sydney and Melbourne. Our public hearings commenced in Sydney on 9 November, followed by Canberra on 29 November and Melbourne on 30 November.

Following today's proceedings, hearings will also be held in Perth and Hobart and we'll then be working towards completing a draft report for publication sometime in March 2011, having considered all of 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. For this reason, comments from the floor cannot be taken, but at the end of proceedings for the day, I'll 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, the exit is out the door on that side; then there are main stairs down to the lobby. Also, gentlemen's toilets are on the left, ladies' on the right.

I would like now to welcome our first participant, Colin Pitman from the City of Salisbury. Colin, if you could come up and take a seat and if you could introduce yourself and say where you're from, just for the record, and then if you'd like, make any submission.

MR PITMAN (COS): Thanks, commissioner. My name is Colin Pitman. I'm a

director from the City of Salisbury. I'm also a board member of Waterproofing Northern Adelaide, which is a region of councils that participate together in respect to true urban stormwater, not imported water. My background is in agriculture and engineering and bolting together 20 different professions to produce and provide water to a small utility of urban stormwater producers.

DR CRAIK: If you'd like to make a few opening remarks in relation to your submission, we'd be very happy to hear them and then we'll ask you a few questions.

MR PITMAN (COS): I've been in the business of stormwater recycling for something like 22 years now. Stormwater recycling basically consists of capturing the urban stormwater that falls on cities and runs from roofs and streets, both industrial and residential, into existing stormwater systems and generally to the sea. The urban stormwater is being factored up in terms of discharge to the sea as a result of the impervious areas. Prior to European settlement, in Adelaide for example only approximately 20 gigalitres of urban stormwater flowed to the sea. We now have approximately 170 gigalitres per annum flowing to the sea. That's indicative of the proportions that flow to sea around the country, excepting that in some cities the climate is substantially different and the volumes are different.

The industry of urban stormwater has several facets to it. They consist of the management of catchments, which local governments generally undertake around the country; flood protection and environmental improvement; and more recently, re-use. Those facets of management of urban stormwater are complementary to the program of urban water re-use. If you construct urban stormwater systems and clean that water as is required before it's discharged to sea, then considerable effort has been put into what is essentially a product of urbanisation which is polluted by human activity in which investment is being made to bring it back to normal quality.

We also, in communities, have to guard against the flooding of properties downstream or, in the case of some cities, guard against tidal inundation of cities because of the low-lying nature of those cities, and so flood management structures need to be constructed and they're normally in the form of detention basins. In the City of Salisbury, we make sure that they're actually not just detention basins, they're wetlands and they have horizontal transmission of water through those wetlands to clean it before it's either re-used by pumping it into the aquifer or it's discharged to sea.

So we have an environmental agenda as well, which because of the nature and form of these wetlands - in many cases, they can be habitat-creating bodies as well and perform in urban communities the possibility of retention, recycling or return of species to the urban environment. All of those investments are complementary to the

production of urban stormwater because they focus communities on water.

The education of the communities in visitation to these sites - in our case, we have about 6000 visitors a year and almost two visits per week of overseas visitors - all generate within the community and local society a perception that we are perhaps doing something wrong in relation to the way in which we constantly look outside of our cities for water and perhaps we could be looking internally within our cities for water. That is one of the key elements of the submission: that the role of urban stormwater as a component of the water supply matrix is, we believe, an important aspect of what we think the commission should consider.

I'll just flag that I have advisory services going in western New South Wales with Penrith, Hawkesbury-Nepean and Parramatta and Liverpool and Blacktown at the moment, where they are combining together to put in a large urban stormwater system for recycling. Minister Jacobs in Western Australia and the City of Canning are also looking at this as an option to potentially capture the 100 gigalitres or so of water in Perth that actually travels to the sea annually and put it in the deep aquifer.

Projects are running in the Gold Coast and Cairns and many other locations around the country, mainly using what is termed tertiary aquifers for the purpose of storage. This is not just a phenomenon in Australia. In Europe there are projects running in Calabria, Slovenia, Syria and Barcelona in Spain, all in the same latitude, using tertiary aquifers. So the tertiary aquifers worldwide are the storage mechanism. What we have not done in Australia is capitalise enough on that opportunity for storage.

Just before I move off that subject, the concept of flood protection which generally can mean storage of water upstream and slow release of it downstream to stop flooding, is now being used in Salisbury as a means to actually hold water back and batch process that water through wetlands to increase the production of urban stormwater for the purposes of aquifer storage and recovery, and we've experienced an almost doubling of the amount of water we can capture as a result of using the flood management structures which are already an investment in the community and allowing those structures, without risk to the community, to be used for the purposes of discharge to wetlands at the speed at which those wetlands can consume that water and at the speed at which the aquifer can receive it.

I'd just like to move on to the second point in respect to our submission. The issue of asset management in urban water distribution systems is an interesting one. The financial position of the state is that they receive money for the sale of drinking water in the society here in Adelaide and that those receipts are designed effectively to meet operating costs and depreciation. What is observed by us as a study of the financial make-up of the cost structure for the production of urban drinking water is

that

the depreciation of the assets has not been fully accounted for in the costing of Adelaide's water; and that effectively means that there is some form of pricing which actually doesn't truly reflect the cost of providing that water.

Whilst there is a return to the government in this state of approximately 200 million, most of that is returned to the subsidy that applies to providing water into the rural sector of South Australia and therefore funds are not actually fully meet the cost of the depreciated asset. So we are finding that new developments which in Adelaide have been basically in the north and south have actually been providing new customers and effectively underwriting that income; and the issue of depreciation of the old assets and accounting for those old assets and their renewal is something which we believe should be taken into account in the pricing for urban water supply in Adelaide and also in other capital cities.

The final point we wanted to make was that, with the opportunities that are arising at least in two states for a regulated market in relation to water, the new developments which could conceivably have at their disposal drinking water from the traditional drinking water sources, sewerage systems from the traditional sewerage treatment plants and stormwater which actually falls on those developments and runs to the sea - all of those components have investments that are tied to central government's request for connection to existing sewerage systems rather than satellite sewerage systems or re-use of that water at the site in respect to stormwater.

Developers are putting water-sensitive urban design systems in their subdivisions. Those investments are being made on the basis that those assets are going to be handed over to some government agency to look after. If those developers could actually own the pipes in the street and those urban stormwater pipes be connected to an on-site treatment plant and an on-site storage system, then the investment that developers make would not be one which is adversarial in nature and is required by planning conditions to comply with the current or contemporary requirements in respect to cleaning of water, but would be made on the basis that they actually want that water for sale and could use it back in the development.

I will make the point that this would not apply to every development because some developments are too small to sustain the investment that's required to actually return that water to the local community. But with the growth centres in Adelaide being anywhere between 2000 and 4000 homes, those developments are big enough to sustain the ownership of the infrastructure remaining with the developer or a retailer and a wholesale producer, and that being independent of the traditional government and council agencies which would normally take over these assets, and those developers would have an incentive to actually invest in that infrastructure with a view to producing it for use within that development. This is the Maude Barlow

concept of localism. They're the three points I wish to make, commissioner.

DR CRAIK: Thank you, Colin, and thanks very much for your submission and the points that you've raised. If I could perhaps start questioning, you've mentioned - and you've put it in your submission - that you've got systems that can provide eight gigalitres per year of fit-for-purpose non-potable water. Can you explain firstly how that's been funded, and secondly why stormwater isn't more competitive in a cost-benefit sense than some other source of water.

MR PITMAN (COS): The initial work undertaken by Salisbury Council was undertaken with funds generated by the council - borrowings; and those borrowings went towards the construction of 56 artificial wetlands of varying sizes, from one hectare up to 100 hectares. So the investment was really in flood management, but those wetlands can double their use as stormwater cleaning systems for stormwater recycling.

DR CRAIK: So did you do it for the purpose of the flood management or was it a dual purpose?

MR PITMAN (COS): Originally flood management. That's the very point I'm making: that the investment we made in flood management complements the investment we've now made in urban stormwater recycling. The way in which that's achieved is by increasing the storage capacity of those wetlands slightly by raising the weir a little, because some of these are quite large, and using that spare capacity above that storage line to inject that water into the aquifer when the water is cleaned to an adequate level. That funding also came from developers. We actually received a lot of developer funds when the developments occurred and that's the very point I was making earlier: the developer has actually invested in this infrastructure and handed it to the council. In our case we've used it wisely and productively, but in many councils and cities around the country those investments in the urban stormwater systems for flood management purposes could also have been used by that developer to actually recycle stormwater, and some private sector investment in the collection and recharge could take place.

DR CRAIK: Just so that I'm sure I understand this, you borrowed some money but developers also contributed.

MR PITMAN (COS): Yes.

DR CRAIK: And the original purpose was flood management, but you've added to the height of the weirs and whatever.

MR PITMAN (COS): Yes.

DR CRAIK: Changed it so you can use them to inject the stormwater.

MR PITMAN (COS): That's correct.

DR CRAIK: Okay.

MR PITMAN (COS): Of recent time there's been considerable investment by the federal agencies in urban stormwater as a result of grants offered to local government and to state government, and we've invested I think it was of the order of $37 million in additional infrastructure to be situated near those flood management structures and for that water to be injected into the aquifer and for an 87-kilometre ring main to be constructed around the city to distribute that water to schools - we have 22 schools connected; 56 businesses; 15,000 homes and increasing in number almost daily; and of course the council reserves.

That investment doesn't shroud the operating costs of the business. Once that investment is on the ground, the operating costs include depreciation - that's the point I'm making about the state investment. It includes power, water quality testing and the pumping systems that are required to pump that water around the city. So our cost structure - which is the final point you wanted me to address - of urban stormwater comes in considerably lower than drinking water.

DR CRAIK: Okay.

MR PITMAN (COS): And it comes back to the point I wanted to make: that urban stormwater, because it's there and is available - and in this state it's identified that 60 gigalitres could be recycled across Adelaide in one sector of Adelaide's bureaucracy, in another case it's 100 gigalitres; there's a big discrepancy there, but it's a question of knowledge, I think. But the urban stormwater that we can catch off streets can be put back to communities at a considerably lower cost than the cost of providing potable water.

DR CRAIK: Potable water.

MR PITMAN (COS): - - - high-quality drinking water, recognising that we're not producing this water to drinking water standard - - -

DR CRAIK: Sure.

MR PITMAN (COS): - - - and we're entering the market with a quality of water which actually is fit for purpose.

DR CRAIK: Okay. Good. One of the things you mention in your submission is

this issue of it would be helpful to councils trying to recover this stormwater if there was actually a stormwater allocation somehow given to councils, and I guess also it provides an opportunity for developers to have this sort of stormwater or some kind of water allocation. Can you give us a bit more of your thoughts on that?

MR PITMAN (COS): Yes. Within the regulated market there are a number of rules which apply to the retention of water within catchments and the discharge of water to achieve environmental values in the streams downstream, so it's not appropriate for councils or developers to take all the water that actually falls on their piece of dirt. There should be always some water still available for the environment and in South Australia they classify that set of rules as a water allocation plan for the community or the catchment and that water allocation plan should take into account those environmental values. That's the point I was making there.

DR CRAIK: I guess what I'm trying to find out is, does the council have any kind of entitlement to that water? Once the environmental volume or percentage or whatever it is has gone to the environment, like an irrigator has an entitlement, can the council - - -

MR PITMAN (COS): No. That's a very good question. The issue of entitlement and the law surrounding that is, across the country, very vague. It is clarified to some extent by statute law in this state where the central government here has placed a licensing regime in place, where you are entitled to take from a stream generally, or from a creek, an amount that is prescribed as a result of the water allocation plan being set in place. It's appropriate therefore that a licence be allocated to whoever wishes to take that water so that at least in the event of some climatic change there can be some adjustments, and that the so-called ownership or rights at least can be regulated to some extent.

Interestingly, the new water bill in South Australia reflects exactly that point, and we're about to be faced with an environment where there will be a licensing arrangement when you take from streams or from aquifers under the water allocations plans which will increasingly be rolled out across Adelaide and across the state.

DR CRAIK: So who owns it between falling on the roof and getting in the aquifer?

MR PITMAN (COS): There are several points of law being provided on that, and most of them align with the fact that the crown is the owner. However, to clarify that, some statute law needs to be put in place to ensure that governments actually say, "Well, this piece of water is not controlled but this is."

DR CRAIK: Okay.

MR PITMAN (COS): I'm providing advice to a research project at the University of Adelaide at the moment, through a group of solicitors that have set up a project across the country - there are a number of universities involved in this issue of law in respect of water - with a view to trying to put some clarity around the way in which the law is couched across the country at the moment. It is different in every state, it is confusing, and I do work in New South Wales on behalf of the council and let me tell you the law there is not just confusing, it's actually positively - - -

DR CRAIK: Contradictory.

MR PITMAN (COS): - - - contradictory, and it discourages innovation because of the lack of clarity. It's pleasing to see in Perth, because of the interconnection between water that falls on land and aquifers, there has been some law put in place to provide for some clarity between that interface, but when you take urban stormwater, which comes through pipes in Perth, and put that into the aquifer, they haven't got that in the equation. That's not in their statute law or nobody has recognised it, and I spent more time in Perth on the last trip, which was a fortnight ago, talking to them about this piece of philosophical problem that faces Western Australia Water. Hopefully, they will go and do some of this stuff that we do here in Adelaide and that will help to clarify, through the process of doing a trial, what the law should be.

DR CRAIK: Sure.

MR PITMAN (COS): But I'll be frank: it is very, very difficult to get commonality across the country, even as you would know in the Murray-Darling Basin. The surface water and groundwater and the link between those and the allocation of those is just a can of worms. It does seem to me that that is an area in which some investment should be made for the purpose of clarifying the law, at least in this country, in a common sort of way.

DR MUNDY: It's clearly a competing issue between an environmental flow somehow defined and essentially whatever is left.

MR PITMAN (COS): Yes.

DR MUNDY: So the policy choice seems to be, give someone a licence to take a fixed amount of stormwater and whatever else goes to the environment and then that licence volume has to be set or, alternatively - I'm just trying to work through what would be the better way to do this - determine what flow the environment needs and then leave a licence for the remainder, which may in some years be nothing if there's drought. I'm just interested in your thoughts about which way is the better way to proceed and in whose hands should that licence be? You were saying that you're

managing a range of wetlands for environmental purposes and public safety flood mitigation purposes. Is the council a natural place for that licence to remain and part of the licence condition being the maintenance of the wetland, or is it case-by-case, if you've got a state agency or the national park and the wetland?

MR PITMAN (COS): First of all, the issue is different from all the way up the catchment and the rules relating to one part of the catchment would not be the same as those at the bottom of the catchment. So I think there's a need for some positive discrimination in respect to the taking of water within rural catchments which is managed by the state and not the local council, and that the state actually positively says where and who should receive the licensed amount.

In urban stormwater systems, however - that's in Adelaide and most cities on plains - I think the rules should be different, because first of all the ecological values of streams are clearly different now from what they were before European settlement, and so we have an ecology which has developed which is quite often artificial for a whole range of reasons. Vegetation has been removed and therefore the bird life is different. In Adelaide, for example, Chris Daniels says all the small birds have gone to the ranges and they're not in Adelaide at the moment because we've taken away the understorey of plantings. That actually also relates to the waterways and what you need to put back to actually, I guess, re-establish the ecology.

Having said that, though, if having determined the quantity that the environment needs to maintain an ecology which may still be artificial, then the take and who takes is very much dependent on the techniques by which one can take that water and treat it cost-effectively. To some extent the owners of the land adjoining the waterways, which are the councils generally, have taken in the north of Adelaide a role in that, but we have developed systems now which are vertical penetration wetlands which have a footprint which can be one-twentieth the size of traditional horizontal flow wetlands and which are almost manufacturing sites with sandbed and - - -

DR CRAIK: Gravel.

MR PITMAN (COS): - - - nanotechnology, sand layers. We're just building six of them and, as a result of work undertaken by the Flinders University in conjunction with Singapore Water, they are going to be the type of thing that I can see the private sector will be looking at with respect to potentially buying an industrial block of land and putting one of those on it and putting in their own recharge system and their own distribution system. So I think we will move to more of a first in, best dressed type of arrangement or locality based arrangement where allocations can be based on what is available in the locality. It may not be on a stream; it may be within the

catchment with a pipe system running down the street, and that be directed into the site. Prof Peter Dillon and I have seen systems in eastern Germany where exactly that happens, using the same sort of macrophytes we grow here and sand filters.

DR CRAIK: Good. Thanks. Just one final question from me and then I'll hand over to Warren. Can you just explain the division of responsibilities for flood management between local, state and federal government, if it's clear?

MR PITMAN (COS): With respect to the Adelaide environment, the federal government has no statutory responsibility for flood management. However, they have been allocated funds under the Natural Disaster funding program which has almost, in my opinion - I think it's now stopped. That's for helping councils and state to fix up their urban waterways. The responsibility for stormwater management in this state is almost totally with local government, with one exception where the state actually is responsible for the River Torrens, and that is really not because of flood management but more a quirk of history. Because there's a multiplicity of councils adjoining the particular stream, and there was a linear park desire and an opening up of communities to the park, they actually saw a need for them to control that.

DR MUNDY: Who does that? Is that the Department of Environment or SA Water?

MR PITMAN (COS): SA Water, which will be interesting - - -

DR MUNDY: It's a bit like the way Melbourne Water manages the Maribyrnong and the Yarra?

MR PITMAN (COS): Very similar, yes. What I do know is that in New South Wales some waterways are in the hands of the state and some are in the hands of council, and let me tell you I find the whole thing very confusing. That is confusing the potential users of the water for the purpose of stormwater recycling, and my advice to the Western Sydney councils was, "Look, stick to a stream which you have control over," but it just seemed to me they could have put this treatment system on a stream owned by the state, or next to it, and almost doubled the capacity, but because of an ownership issue, a control issue, they've had to stick with what they can control. But that is not the case here.

DR CRAIK: So there is some message there about some clarification of control over these things.

MR PITMAN (COS): Yes.

DR CRAIK: Thank you.

DR MUNDY: In various parts of your submission you talk about the fact that councils have this multiplicity of roles with respect to stormwater; there's clearly an environmental role, there's a public safety role, and obviously there's an opportunity to sell it to people.

MR PITMAN (COS): Yes.

DR MUNDY: Can you, briefly, give us a sense of how councils fund these activities and the extent to which you think you could set up a costing and pricing structure that would properly recognise the public and the private-good elements of it?

MR PITMAN (COS): It's a good question. First of all, the separation of operating costs between, say, a flood management component of the system and a stormwater recycling component of the system is something which we have spent a fair bit of time on doing analysis of. Some of our wetlands have been totally built for stormwater recycling, so the capital costs, their depreciation and their operating costs are all attributable to the cost of producing that water. One of those is on an airport, on land we don't own, and we lease that land off the airport for 99 years and that is a high-producing wetlands.

DR MUNDY: I understand the commission might be inquiring into airports sometime, so - - -

MR PITMAN (COS): We propose to expand that project on the airport because it's quite profitable.

DR MUNDY: So in a circumstance like that, the flood mitigation benefits and the environmental benefits are essentially free public goods that come from the commercial activity?

MR PITMAN (COS): That is correct, where we've structured wetlands that have been fundamentally for flood management, and what we've done is tacked onto it a pumping system to inject into the aquifer and a distribution main. Then the costs attributable to the production of water in that case is- there's been a small allocation towards the cost of stormwater flood recycling but the majority of the costs are related to stormwater recycling management.

DR MUNDY: Okay, so the pipe that takes the water away and everything else, you take the incremental stuff and then a small proportion, then the rest of it's essentially flood mitigation?

MR PITMAN (COS): That's correct. We have formed, in our organisation, a water business unit which has full cost attribution for production of stormwater and its sale, pays rent for its accommodation, it has me as the CEO and it has six staff, and all depreciation is costed against that business unit. It has its own profit and loss statement, it has its own set of books and we separately report that to the organisation as though it's a subsidiary company. We are now separating that business unit into a wholesale arm and a retail arm because of the introduction of regulation in the market here in Adelaide, arising out of the Water for Good plan.

That will then have a cost attribution to the retail component and a cost attribution to the wholesale component and one will sell into the other and there will be a network charge applying to the distribution of that water. So we've been fairly rigorous about that. Many councils have not. They've seen this as a social piece of infrastructure and have invested for the purpose of its social attributes, environmental attributes and its sustainability attributes.

DR MUNDY: So then whatever revenue they might earn off it just goes to the general fund?

MR PITMAN (COS): That is correct, yes.

DR MUNDY: So you've got this stand-alone water business, which is essentially a wholly owned subsidiary of council?

MR PITMAN (COS): Yes.

DR MUNDY: When you're determining your long-run marginal costs, there's obviously a capital component to that. There's depreciation. Is there a consideration of a return on the capital employed in the business as well as the depreciation?

MR PITMAN (COS): Yes. For the purpose of a target, we have targeted an internal rate of 9 per cent. We've hypothecated an interest charge over and above the borrowings because we can borrow in South Australia through the Local Government Finance Authority at a fairly low interest. But because this water is being attributed into the market with some risk, we have taken advice from Deloittes in respect to a risk component to the interest charges to the business and that's repayable to the rest of the organisation - that's about 1 per cent over and above the cost of borrowing that money in the market to cover the risk.

DR MUNDY: So the water that you currently produce and is of non-potable standard, is there any thought of raising the standard to return some of it to the drinking supply, or is it just something you haven't - the cost doesn't make sense?

MR PITMAN (COS): Yes.

DR MUNDY: I guess my other question is, what price would you need? How would you see that price? I mean, is it the cost of the water out of the Murray?

MR PITMAN (COS): That's a very good question. There is about to commence a study being led by Dr Peter Dillon with respect to the - and he may be talking today?

DR CRAIK: No.

MR PITMAN (COS): Okay. It's a three-year study which is designed to assess the techniques that may be necessary to bring that water to drinking water standard and what infrastructure and treatment processes will be required to do that. Clearly in any particular catchment there's variability in the quality of the water that comes into that catchment, both from one year to the next but also from one storm to the next, and the water quality within that catchment must be assessed under the risk management regime to determine what the treatment range for that catchment should be; so it won't be the same as the next catchment. So if we got down to the point of actually treating that water, catchment by catchment, to drinking water standard using some RO system or some filtering system and chlorination system, and then injecting it back into the network pipe, then it would be a different cost regime from one catchment to the next.

The other alternative is to direct that stormwater into the existing storage systems - that's the dams in the Hills catchments here, owned by SA Water - when they need it, but storing it in the aquifer and only discharging it when it's needed. We have commenced on a number of our streams an analysis of the water quality at various flow environments. I imagine this will be done as part of Peter Dillon's research project as well, but on a particular catchment we're testing this vertical penetration wetland to determine its performance. We wanted to know the background for water quality assessment through the wetlands.

Now, those water quality findings to date have shown, as a result of us benchmarking that water quality against what is received into reservoirs around this country, that that water quality is better in most cases than the water that's received into reservoirs around this country. We have those water quality figures from some statistical analysis done by - and a research paper. That says to us that there's no doubt that we will be able to, under certain circumstances, subject to our entry into the SA water market, put that water into the reservoirs and it can be treated through a filtration process, chlorination process and put through the drinking water network.

DR CRAIK: Would you sell it to them?

MR PITMAN (COS): Oh, yes. We have a surplus of stormwater at the moment. Our entry into the market is not as easy as one might think. We're penetrating a market which already has an existing water provider, a monopoly water provider. We come in with a price that's lower but, on sites, everybody has to separate their drinking from non-drinking if it's an existing development. New developments are easy because you reticulate at the time of the development. But some of our industries have had to do separations and that, for the largest car-maker in Adelaide, is about $200,000; not a large cost. Their return on investment - their payback period is about three years. They're back in the black in three years if they were to use our water. But there does not seem to be in the market enough social conscience to actually use our water over other water.

DR MUNDY: So the real economic question then, if you go down the route that you're suggesting of pumping this treated stormwater into the reservoirs, becomes a cost of how do you get it back up to the reservoirs?

MR PITMAN (COS): That's correct. And in that case, we have a network pipe that runs around the city, and it's only about two kilometres to the nearest reservoir.

DR MUNDY: Just one last question: in your submission you mention, and I think you've mentioned it here today, this problem of depreciation not being fully recovered and therefore essentially prices being suppressed and that obviously makes entry by people like yourselves more difficult. Do you have a sense of how much that price suppression actually is? Is it 10 cents a kilolitre, is it 50 cents, is it $1 a kilolitre?

MR PITMAN (COS): No, we haven't been able to determine that. We study fairly closely the state government's requirement to report to the community on how they make up their price and we've had an economist look at that for a couple of reasons. First of all, we see prices escalating in the market here as a result of the construction of the desalination plant, and that's helping us enter the market because we're coming in lower. But we were not - five years ago - faced with that, and we wanted to know exactly how much opportunity we've got to move into the market, recognising that there would at some stage, due to the national accounting requirements being pushed into the market, have to be an increase to cover-off on full depreciation. It's at that time we actually determined that there was quite a significant differential and we're not sure exactly what it was at that time - this is about five years ago that was assessed - but it was of the order of 50 cents or thereabouts.

DR MUNDY: Just one last question from me. In the decision to build the desal plant, do you know whether - and you mightn't know - any consideration was given to taking the stormwater, incurring the costs of pumping and additional treatment, to put it back in the reservoirs? Was an analysis done of the two options?

MR PITMAN (COS): There was analysis undertaken on six or seven options by an independent consultant acting for the state government in the derivation of the Water for Good plan. Regrettably, the parameters used by the consultant in terms of determining the costs make-up of producing stormwater were incorrect and so it's interesting to note that in that study it showed stormwater as being higher priced than drinking water, irrespective of the quality, in the market. We know that we can sell into the market at about 50 cents lower than the market price for drinking water and still make a considerable profit. So by example we actually know that that analysis was not correct.

DR MUNDY: Okay.

DR CRAIK: Thanks very much, Colin. Thanks very much for your submission.

DR CRAIK: We will now move on to Dr John Radcliffe from the Academy of Technological Sciences and Engineering. John, if you could start by saying your name and your position for the record, and if you would like to give us a brief intro, that would be good, thank you.

DR RADCLIFFE (ATSE): Good morning, commissioners. I'm Dr John Radcliffe. I am here representing the Australian Academy of Technological Sciences and Engineering, but I come with a background of having been a national water commissioner, deputy chief executive of CSIRO, a Murray-Darling Basin commissioner, and earlier director-general of agriculture in South Australia.

If I might initially just comment on the academy's interest in this matter, the academy is comprising about 800 fellows who are interested in the development and adoption of existing and new technologies to improve and sustain Australian society and economy, and they have all been recognised for the eminence of their contribution in that regard. The academy has a series of forums to which individual fellows may attach themselves if it's in their field of interest and we have a water forum which has, I think, 78 members. So when this Productivity Commission inquiry was initiated we sent an email to our water forum members, drew their attention to the issues paper and invited them to provide advice which we might incorporate into our submission.

Subsequently, after the submission was drafted, that draft submission was circulated to the water forum members for any comment that they might choose to offer and we did get a little bit of comment back, though I must say most of the water forum members didn't choose to produce much disagreement. I might add that the water forum has a leadership group which I chair. The other two members are Brian Spies, who was formerly chief scientist of the Sydney Catchment Authority but with an earlier background at ANSTO and CSIRO and various places, and Dr Tom Connor from KBR in Brisbane, who is a chief consultant in that company. The organisation itself of course is basically one driven by the voluntary efforts of the fellows within it, though of course it has a formal management structure.

What I would like to do, if I may, is just quickly run through the issues, and we covered a wide range of issues, trying to respond to a fair proportion of the questions asked in the issues paper, though we didn't necessarily seek to address all of them. I guess the first point is that the academy believes communities have the right to have access to good, reliable, clean water supplies and we very strongly support the initiatives implicit in and signed by the federal, state and territory governments to the Intergovernmental Agreement on the National Water Initiative, though we express some concern about the slowness with which some aspects of that are ultimately being implemented.

A particular concern we have at the moment is the recent decision by COAG to withdraw the remit of all ministerial councils from March 2011. It is unclear at this stage exactly what that means in terms of water. I don't believe that water issues can all be dealt with at the COAG level, any more than everything else can be, but it is important that a single ministerial council is identified which ultimately gets responsibility for water policy issues.

I guess we are concerned and we draw your attention to the great diversity of water utilities across Australia, particularly the position in Queensland and New South Wales where there is a very large number of municipally owned water utilities which, in our view, could use some reform. A degree of reform has been undertaken in Queensland and the number there has been reduced from over 100 down to 70-odd. Each of them in those two states link through an informal industry water directorate as an industry body, but we believe that there is a lot of scope for further reform, particularly the limited skill base that can be provided to these very small utilities. I suspect there are conflicts of interest between their other local government functions and their water services.

We think there should be a better definition of how stormwater is managed, and Colin Pitman - who I think is reasonably well recognised as the leading authority in this area in Australia - has just given you a very good summary of the position with regard to stormwater, but Colin of course is at the bottom of the catchment and the position may be less clear for water utilities higher in the catchment in relation to the riparian rights of organisations further down the catchment, as well as the issues of estuaries at the bottom of the catchment.

We think there should be more work on the suitability of treated urban stormwater for adding to the drinking system. As you know, urban stormwater is already used in Orange and, as Colin pointed out, there is research being initiated here by Dr Peter Dillon in CSIRO and in association with universities in the Goyder Research Institute to examine the scope for using groundwater remediation in aquifers to bring urban stormwater to a potable drinking standard.

We are also concerned about how water utilities have access to and the ability to purchase additional water requirements. We believe that the utilities should all operate on the same basis as is set out in the National Water Initiative, in which they all have clearly defined entitlements, allocations and licences. The basic problem here is that the states do not use the standard definitions used and defined in the National Water Initiative. They all use different nomenclature. Whilst that is not particularly an urban issue, it's a general issue and, if legislation is being written or rewritten or revised, the states should be encouraged to move to a standard set of definitions.

The states all had a responsibility to review their water legislation under the National Water Initiative. I might note that Western Australia has been dragging the chain and is still operating under the Rights in Water and Irrigation Act 1914, and I would like to suggest that we have had some improvement in how water has been managed since then. We take the general view, and support the National Water Commission, that the introduction of treated recycled water into the drinking water supply system is an important option and should be considered on its merits, without having psychological hang-ups, and there is a need to ensure the community becomes comfortable with the merits of alternative water sources and they're considered on their respective, particularly economic and safety, merits.

The community needs to have a better understanding of the whole water cycle and we need to integrate our planning systems more effectively, rather than having separate planning regimes for water management, ecological management, biodiversity management, coastal processes, local government land use, planning and catchment services. So we confirm that all of the utilities should be using and have access to water entitlements and they should be able to buy more water entitlements, if they need them, as SA Water has done from irrigators on the Murray swamps.

There's a bit of a problem about water resource management and its separation from the function of water supply services, which was an implicit component of the 1994 water reform. We are seeing recidivism in two organisations: in Queensland, Seqwater, which is the Queensland bulk water supply authority, is now acting as a catchment manager as well as a wholesale water supply provider; and for Melbourne Water, I understand new legislation is being brought in that it will make it a catchment manager by taking over the role of the Port Phillip and Westernport Catchment Management Authority.

I have discussed this issue with the former chairman of the National Water Commission, who takes the view that this does represent a breakdown in the original commitment from 1994, and which needs to be addressed in terms of whether that original commitment is still valid or whether, in fact, attention should be drawn to the fact that these new arrangements are not compliant with the original commitments taken in 1994.

I guess the other thing is that we must ensure people recognise the interdependence of water policies with a lot of other policies; for example, carbon sequestration by tree-planting, which is now being managed by the South East Natural Resources Management Board in South Australia, so that the planting of new forests on previously unforested land does require the owners and developers to purchase a water entitlement on the market, which provides for the growing of those trees. There's a lot of quite, I guess, simplistic comment about, "We'll plant a lot of trees and that'll fix our global warming obligations," but the related issues on the

effect of catchment management and related things need to be taken into account.

I've already commented on the need for the National Water Initiative compliant language to be brought into all acts and regulations and I think that's an important principle. The states are inclined to say, "Yes, we agree but not now, it's too hard." There is an educational process that needs to be undertaken to move to new NWI-compliant language because this becomes important when you start trading water across state lines.

There's a lot of discussion about the energy involved in running water systems. The amount of energy used domestically in running hot-water systems exceeds about fourfold the total amount of energy used to bring water to the house and take the effluent away again, and yet we see very little discussion of the efficiency of hot-water systems, particularly where they're electricity based. We see lots of discussion about the use of solar hot water and all sorts of rather peculiar economic distortions brought in to encourage such things but we should be looking more broadly at the whole area, which also raises whether we shouldn't be looking at more creative pricing signals in terms of scarcity and demand, and it's interesting to see that some Victorian retailers are beginning to address that issue.

There should be provision, I think, for more scope to offer a range of alternative water products. We've seen the example of Salisbury, which has really produced a number of products in the absence of any real legal environment in which to do what they're doing, historically, and yet they've been very creative in how they have tackled that sort of thing.

Independent price regulation is clearly a serious issue. We have, I think, in the case of IPART in New South Wales, a clearly independent price regulator. Victoria and the ACT have a relatively independent price regulator. The price regulation in the other states and territories I think is less than perfect. Historically it's really represented what the electorate will stand for and I think that area needs to be much more strongly developed. There may be scope for some sort of a national approach to it, although you're probably never going to get a national grid in the sense that you might have an electrical national grid, but I think there's scope for developing national principles which might be agreed to be the basis of price setting in all of the states and territories.

I think that we probably need further modelling in how various alternative components to water systems can be configured and owned to allow retail purchasers a choice of water supply or products, and what legislative structures might be required to achieve that sort of thing. An example of this would be the Australian Rail Track Corporation model, in which you might have the basic infrastructure owned by an infrastructure corporation, then you might have water supply

wholesalers able to supply water to that infrastructure and water retailers able to purchase from suppliers on the basis of merit and sell it competitively to households.

I think all that needs a lot more development but I think there's some scope to explore that sort of thing, so we need to be able to encourage more innovation. At the moment there's really only New South Wales legislation which provides for competition and provision of alternative water suppliers. The current legislation in New South Wales doesn't really provide a horizontal playing field because publicly owned utilities - notably Sydney Water and Hunter Water - are excluded from the terms of that legislation.

There's also the issue of how you establish private sector investment and have you got adequate provision for continuity of the operation of the public service if it comes from the private sector. We did have an example in South Australia where a private sector effluent treatment plant was established. Ultimately the parent company got into difficulties, although I think the treatment plant itself was probably an economically viable unit, and SA Water was obliged to take it over. There needs to be some sort of consideration of bonding or other financial encouragement or basis to ensure continuity of supply in the event that there's any threatened failure.

I think also we need some modelling on alternative approaches to recycling water fit-for-purpose versus recycling all of it for drinking water. Do we have a series of alternative fit-for-purpose supplies which may be a little cheaper but might have more infrastructure cost, or do we recycle the whole lot of it fit for drinking water, which in effect has been done in Queensland, albeit constrained by a political distortion of saying, "We won't use it unless 40 per cent of the reservoir capacity or less has been reached"? So the competition arrangements in Queensland are quite peculiar and I'm sure you will have explored those as well. We probably need to look at a nationally consistent approach to recycled water regulation and how that might be addressed.

We do now have very good standards for use of recycled water for addition to drinking water supplies. We have good standards for aquifer storage and recovery of water - and Peter Dillon has led much of that activity - and for stormwater management. The stormwater guidelines - and they are guidelines, I guess, not regulations. They become regulations to the extent that the states then choose to adopt them. The stormwater guidelines link back to the national drinking water guidelines. I guess the quality of water should be firmly in the hands of suppliers in terms of risk management and the policies to which they are obliged to operate – based on the HACCP principles - but regulation that ensures it has the capacity to ensure those standards are met.

Therefore, I think if there is to be National Water Initiative revision, there's a

whole series of issues that could be brought into it. It is perceived to have been a bit underdone in the urban area, although I must say the National Water Initiative was a surprisingly effective document in the totality of what it sought to encompass and actually it's written in pretty plain English, so I think the people who prepared it did pretty well at the time. That does raise issues, of course, of water and stream composition and we might need to look more broadly at the quality of water coming into our various catchments, and indeed Colin Pitman alluded to the fact that some stream catchment water may be not as high a quality as everybody thinks it is, even though it is perceived loosely to be natural, which seems to have added value unconstrained by the scientific facts, probably.

The other problem we have is I think we need to keep the National Water Initiative implementation moving. When the first review was done initially by the National Water Commission under the old NCC final analysis, we did have some capacity for putting on constraints, and indeed we did, until such time as effective trading of water over state boundaries was achieved in some formal mechanism. But since that time, the National Water Commission has not really had any power to encourage implementation, which has fallen behind. The last biennial assessment of the Water Commission I think is a very good document and it spells out fairly plainly where there are some deficiencies.

In summary, all of the states are doing some parts of the NWI quite well but it varies between states as to which bits they're doing well and which bits they're falling behind. I guess also it could be said that, looked at internationally, there is a great deal of interest in what is being undertaken in Australia. I am not sure that's as widely appreciated in Australia as it is overseas, but there's a great deal of interest in what's perceived to be an innovative approach to how we manage the nation's water and I'd have some concern that suddenly we seem to be having floods rather than droughts. I hope that doesn't take the eye of the policy-makers off the ball of really addressing our water resource management.

DR CRAIK: Thanks very much, John, and thanks very much for the submission. It's very detailed. I should probably declare at this moment, I am a fellow of the academy but I neither had input to the submission nor did I see it come out for review. Warren is going to start the questioning.

DR MUNDY: John, at various points you mention the continuing support of the NWI and the need for a refreshed approach to national water reform. Do you think that it needs to be part of a broader reform agenda for the water industry or should perhaps it be integrated with the renewed interest that the Commonwealth has in urban reform policy or do you think it might be better as a stand-alone reform agenda?

DR RADCLIFFE (ATSE): I think the question you're asking is, should we, you might say, open the National Water Initiative and add things to it - which has of course the risk that good things in it might fall out, so there's always a risk in opening legislation; although of course it's not legislation, it's just an unenforceable agreement, effectively - or should there be a separate agreement as there was say in terms of the Water Act and dealing with the Murray-Darling?

My own feeling is it would be preferable if you can do a risk assessment that encourages you to actually achieve an expanded National Water Initiative because clearly a mutual agreement between the Commonwealth and the states and territories - they've all signed up to it; admittedly, Tasmania signed a little later because their premier had unfortunately died the day they were supposed to be signing it, and Western Australia signed up two years later because it always does, but conceptually they are now all signatories. There has been a degree of politicisation unfortunately on water issues; particularly there's evidence of that in the current debate on the Murray-Darling Basin Plan guide, which is only a guide, but that seems to be largely ignored as a description of it.

But I think it would be desirable to try to further develop the document. There are other areas outside of urban issues, particularly the relationship with mining where mining water, where it's co-produced with whatever else is produced as distinct from water actually used in the processing and management of the mine, is largely still outside of the National Water Initiative. There is a problem of the oil and gas industry producing quite a lot of co-produced water and just evaporating it out in Central Australia. We've increasingly got the problems of coal seam gas and its likely interactions with aquifer management. Whilst I am not close to that issue, I think there are issues there that will need to be addressed, albeit they're outside of the urban framework which are in your terms of reference.

DR MUNDY: You've indicated that various jurisdictions are at various points on the reform journey. Obviously NCC national competition payments have now become a footnote in history.

DR RADCLIFFE (ATSE): Yes.

DR MUNDY: How would you see encouraging jurisdictions to lift their game on pursuit of the current reform agenda and any new one? Do you see any tensions about the fact that some have done more than others and there may be some rewarding the laggards, if you like?

DR RADCLIFFE (ATSE): This gets you into the very complex area of where financial support comes from for state based projects. We have a variety of programs which the federal government has put in place and some of those do not

necessarily relate to NWI commitments. In the early days of the role of the National Water Commission, it was responsible for Water Smart Australia and it could take into account whether project proposals were compliant with the initiative. But you also have the problem that all of those projects represent a subsidy in many ways to the management of water.

You may recall Kerry Schott a year or so ago had an article in the Financial Review in which she nobly said she would not be prepared to accept any subsidy for building a desalination plant. On the other hand, the South Australian government I think was probably quite grateful to form a queue for subsidy for a desalination plant. There was a considerable subsidy in the Western Corridor scheme - about $408 million, I think - in Queensland. So there are issues of how you manage capital, which capital you are actually having to support, how is that capital recognised in terms of the water pricing issues?

Of course, the water systems at Salisbury, which Colin was describing, also had Commonwealth money in the Better Cities funds in the early stages. It had some investment from Michells, one of the first customers, who run the wool-scouring works; because the water from the Salisbury-Parafield Airport wetland was half the salinity of Adelaide tap water, so they find that quite attractive. So there are a whole lot of market issues to be addressed, which then takes you to issues of the programs that the Commonwealth chooses to support.

The Commonwealth has had a stormwater program, a fair proportion of which money came to, I think, South Australia, probably to the aggravation of people perhaps in other places; perhaps including Kerry Schott, for all I know. I think that there should be perhaps some standard of progress before eligibility is provided, but of course that also means that you need to have worked out what's the policy framework in which you interpret the capital that's obtained from grants from the Commonwealth. I guess some of that is beyond my financial expertise; but good luck.

DR MUNDY: Just one other question before Wendy moves on. You mentioned that the academy has got - the submission talks about the concern about the large number of utilities in New South Wales and in Queensland, although we've had some discussions about how particularly in New South Wales there's an alliance framework coming out of the work that was done by Gellatly. But I guess I'm interested in your thoughts. At one end of the spectrum we have New South Wales and Queensland, in which every town has its own water authority, through Victoria and Tasmania, where there are what you might call regionally based authorities, to - to a large extent - South Australia and WA where, for all intents and purposes - - -

DR RADCLIFFE (ATSE): And the Northern Territory.

DR MUNDY: And the Territory - and the ACT, but I don't think that's particularly germane to the discussion - have a single water authority. So I'm interested in your thoughts about, is the optimal down at the WA/South Australia end of the spectrum or is it more around the Tassie/Victoria model? Where do you think the balance should ultimately rest?

DR RADCLIFFE (ATSE): I guess there are technical arguments and economic arguments. You could say the Western Australian Water Corporation, SA Water and Northern Territory Power and Water and ACTEW are effectively monopolies; offset in the South Australian case by calling tenders for the operator, which produces a degree of competition, but you still finish up with a single operator once you've let the tender and you're stuck with it for quite a while. But they do have the capacity, I think, to develop a good skill base in a range of activities in terms of engineering water quality, oversight of wastewater treatment plants, particularly if they're being run contractually by somebody else as they are in South Australia; and I think there is quite a lot to be said for that.

When you move to a more regional approach, you then have to ask how do you provide the technical backup? Is each regional grouping strong enough to have the range of skills it needs? And I've no doubt some of them are and some of them - in Victoria, for example, have been relatively creative in approaching how they've done various things. It also depends to some extent whether they're an urban utility or whether they're a regional utility which provides an urban service and a rural service for irrigation.

I'm not sure that I could give you what is a perfect answer but what became clear from the study the academy did several years ago of the position in Australia was the two states that had a multiplicity of utilities - I might say despite the protestations of the New South Wales Water Directorate to the academy - do not have as strong a skill base. They are more dependent on the use of consultants. The consultant market comes and goes, depending on what the demand is, and there was the problem I think of separating the business aspects from the local government political aspects. The recycled water debate in Toowoomba is a reasonable example of that and there were similar arguments in New South Wales in a number of locations. Griffith? No.

DR CRAIK: Goulburn.

DR RADCLIFFE (ATSE): Goulburn, that's right. So I think, in any case, there is a need to move towards bigger, more viable aggregated organisations, although I note there seems to have been a little bit of disturbance in Tasmania as a result of what's been happening there, but they may be just people uncomfortable with

change, so I don't really have a close handle on that.

I guess my own view - but it might be just due to mental inertia on my part - is probably to prefer a single authority responsible for the overall planning, and then there's the separate issue of how you actually carry out the services, many of which are now done by BOOT schemes and that sort of thing.

DR CRAIK: John, I want to ask you about the desalination capacity in Australia. I mean in South Australia but also generally in Australia. It's nearly 500 gigalitres. Do you have a view about whether, in all cases, all the options were considered and there were appropriate cost-benefit analyses performed; and if you've got any comments on the transparency of that; and whether you think that all the energy costs were taken into account in doing that.

DR RADCLIFFE (ATSE): I don't think I could give you an objective answer to the question because I'm not familiar with the detailed processes which all the respective plants went through. The Perth one, which was the first one, at Kwinana, had a much higher value for money - I think - capacity and generated little political uproar. It was just quietly built and it was built in advance of the big international demand, so they actually got very good value for money.

The second one, at Binningup, which I notice isn't listed on the table - which it should be - is more at the margins of supply, I suppose. I think there was a certain amount of, you might say, trigger-happiness in the face of rapidly worsening drought and it's interesting to note that the direction taken in most states was different from the direction taken in Queensland. Queenslanders finished up with a portfolio of water sources with both the desalination plant at Tugun and the three advanced water treatment plants in Brisbane to pump water to the Wivenhoe Dam, which also raises the issue of course of whether it's really necessary to pump water to the Wivenhoe Dam, which has an energy cost. Much of that derives around the psychology of running it through a natural environment.

But there are people who criticise water recycling schemes for potentially potable use and I think much of that criticism is not based so much on the technology as on the security and capacity of the human resources that are responsible for reliably carrying it out. We've seen examples in recent times where there has been human failure: I guess the recent fluoridation exercise in Brisbane, the cryptospiridium affair in Sydney a few years ago - which wasn't a cryptospiridium problem, it was an analytical problem - in which everybody in Sydney was boiling water unnecessarily for two weeks, as it turned out. So human deficiencies and risks do have to be covered and I think that's more of a problem.

In terms of the economics of these various respective plants, they are all driven

by I guess security of supply of seawater not being climate dependent, and whilst economists talk with some enthusiasm about the stormwater that Salisbury has got, it is of course clearly climate dependent. I don't think I can give you a more specific answer than that. You would have to go and seek the economic information for each of the respective plants, but I think you will find there's a fair bit of variability in the economics of them and it may relate to things like international bond markets and other financial, rather than technical, issues.

DR CRAIK: Sure. Another question, and we'll finish up in a second. Water utilities often have a multiplicity of objectives and often they're actually conflicting, so do you have a view about how those objectives should be rationalised and whether the utilities should do it or whether the government should give them advice on how to make trade-offs?

DR RADCLIFFE (ATSE): There are conflicting objectives in things like social welfare responsibility for providing water to widows and orphans in households that are financially strained. I guess my view is that the water business should be separated from the social welfare business. Now, the fact of the matter is that work by the ABS several years ago showed that the total cost of water in the average household income was 0.7 per cent of average weekly earnings, which is very low. On the other hand, people might argue that petrol is essential. We don't have a subsidy on that, we actually have a negative subsidy of a tax, but everybody cheerfully pays for their petrol. They're not, as far as I know, out there forming a queue for subsidised petrol, though they certainly do in some other countries - Indonesia, Iran, India and other places, which we needn't go into here.

I think that the policies of running a water business should be primarily driven by the economics and the market and the circumstances that they're in; that other issues such as catchment management and responsibility for meeting the needs of the environment should be independently managed, as should be the social welfare issues of supplying concessions to those who are having difficulty paying for water, and I think also the economics need to be quite firmly considered when proposals for grandiose schemes such as taking water from north-west Western Australia to Perth or reinvigorating the Bradfield Scheme and such matters come on the horizon.

DR CRAIK: Okay.

DR RADCLIFFE (ATSE): It's great to be talking about nation-building schemes but the nation generally can't afford those sort of things just for the greater glory of having done them.

DR CRAIK: Just one final question. What's your view of restrictions?

DR RADCLIFFE (ATSE): My view of restrictions is that they should not be normally used. They should be used with as low a frequency as possible. Whilst the relationship between price and water consumption is not terribly well established, I think there is more scope for price signals to be provided. At the moment many people get no effective price signals from water. People living in apartment buildings, in many cases the landlords pay for the water - not I think in Melbourne, but in most places. I think there should be more direct price signals. They should be related to seasonal issues, security of supply, whatever. It's interesting to note, though, that restrictions have reduced and seem to have continued to maintain lower consumption, even though restrictions have been removed, as given by the example from Brisbane.

DR CRAIK: It has rained a bit.

DR RADCLIFFE (ATSE): Which I guess is interesting.

DR MUNDY: The dams are full.

DR RADCLIFFE (ATSE): But, on the other hand, I think people get pretty unenthused after the novelty wears off. I mean, they've all nobly been saving water and showering with a friend or whatever they've been doing, but after a year or two they really expect a service to be provided. So I think they are a very temporary respite and we should be looking at mechanisms which also provide other signals which deal with responses to water availability and use.

DR CRAIK: Okay. Thanks very much, John. Thanks very much for your submission and to the academy for the submission. I think we had better move on. Thanks very much for your information.

DR CRAIK: Our next person appearing is Jodieann Dawe from Water Quality Research Australia. Jodieann, if you could say your name and your position for the record, please, and then if you'd like to give us a brief introduction, that would be great.

MS DAWE (WQRA): Thank you for having me today, Wendy and Warren. My name is Jodieann Dawe and I'm the chief executive officer of Water Quality Research Australia, or WQRA as it's known. On behalf of WQRA, its board and its members, I would like to thank the Productivity Commission for the opportunity to make a brief presentation to the commission today, but also for enabling a written response to the issues paper on Australia's urban water sector.

Very quickly, I'd like to offer a brief introduction to our organisation and what the role of WQRA is in the Australian water community and why I regarded the submission of a response to the issues paper a high priority. The provision of sustainable, clean, safe drinking water is fundamental to the maintenance of our society. Water Quality Research Australia plays a major role in this task by focusing on initiating, facilitating and managing collaborative research of national application in the priority areas of water quality, the Australian water industry and the larger community.

The formation of WQRA also marks the successful transition from the federally funded Cooperative Research Centre for Water Quality and Treatment which, after 13 years of successful operation and including significant development and input into the Australian Drinking Water Guidelines, has now become an incorporated not-for-profit company that is owned and funded by its members. We currently have 46 members and we represent all states of Australia and the Northern Territory. We also include a wide range of players from the Australian water community, including Australian water utilities, research organisations and government departments, including Health and Water.

WQRA brings together key water research groups, industry members and regulators across Australia to conduct targeted priority research, and these relationships place WQRA in a very unique position to draw upon the expertise and experience of its membership community to rapidly address current and emerging issues in public health and water quality, but also to comment on water quality aspects of potential water reform. In addition, WQRA has significant overseas links with like research organisations in the US, Europe, South Africa and Singapore, and we undertake collaborative research and knowledge-sharing to further Australia's interests.

The main focus of our research program is on urban water issues related to public health and acceptability aspects of water supply, water recycling and aspects

of wastewater management. However, WQRA also undertakes critical research through a regional and rural water supplies program, which is aimed at improving water quality and public health in rural areas. WQRA also addresses the ongoing national need for a sustainable training program for young water professionals, in a climate of limited national investment in training, by offering a strong education and training program which focuses on developing tertiary-qualified individuals, skilled in research up to a postgraduate level for the water industry.

The response prepared by WQRA is focused on priority areas related to water quality issues associated with the supply of urban water, wastewater and treatment of recycled water. Increasing stress on existing urban water supplies, as well as the move towards the use of alternative water supplies, have resulted in a greater complexity for both state and federal governments and the water industry in the management of water. There are also new challenges for industry, regulators and government in relation to economic drivers and cost structures in the provision of water.

With the impact of drought, climate change and population growth, clearly the recent challenges in delivering water services to urban populations has been strongly related to quantity and security of supply. While it's understandable there's been considerable focus on these aspects, it is crucial that water quality never be taken for granted. Appropriate water quality treatment processes are fundamental in securing drinking water supplies for urban populations. In addition, in relation to delivering fit-for-purpose water, it is important to ensure that a treatment regime is appropriate to deliver the quality water for the application and that water is not over or under-treated.

It is important to remember that economic drivers based on quantity alone do not provide the right signals regarding the true cost of supplying safe drinking water and for the management of wastewater and recycled water. In considering micro-economic reform for the industry, particularly the impact of implementing cost-saving measures or introducing greater levels of competitiveness within the industry, it is important to remember water quality and the costs and challenges associated with maintaining the current level of quality for urban areas. This is crucial, particularly at a time when there are many challenges facing the industry in ensuring security of water supply at a cost point that satisfies consumers.

In response to the proposed elements of reform, as outlined in Australia's urban water sector public inquiry document, WQRA would like to provide the following comments for consideration by the commission. Firstly, in considering economic efficiency it is, as stated on page 14 of the paper, an absolute imperative that water quality does not fall below the standard required by users and does not pose a threat to public health. Reviewing allocative efficiency targets is more pertinent to the

provision of water quality as lowest-cost options may not be adequate to ensure safe or fit-for-purpose water, especially if the market moves towards a competitive environment or third party access is implemented.

A stronger component of ensuring that high-quality water for drinking is maintained and fit-for-purpose water is provided, particularly during this current state of change, is to encourage legislation for water quality requirements in relation to meeting water quality targets. These should be consistent with the Australian Drinking Water Guidelines and other guidelines for wastewater and recycled water treatment. Setting cost based productive efficiency targets alone may result in unintended outcomes, while providing a framework of compliance based on the ADWG will help to ensure quality targets are maintained.

It must be recognised, however, that there is a cost in meeting legislative requirements, resourcing, monitoring and reporting costs. These are often intrinsic, often hidden costs at the moment, that are needed to develop, maintain and audit compliance. These costs should be duly acknowledged as a necessary cost of business.

The second point of WQRA's submission is regarding the use of non-traditional supplies of water to assist in augmenting supplies to ensure water security. Urban supplies are moving towards greater diversification in water sources, including desalination, stormwater, recycled water, rainwater tanks and groundwater. These clearly have different costs associated with the provision of safe water, as well as a range of management and operational issues to ensure quality but also aesthetically acceptable water to consumers. These aspects need to be considered in addition to the operating costs, reliability of supply and environmental impact when assessing the true cost of providing augmented supplies and it is not beneficial for the Australian community if government planners and water utilities are not supported to undertake their core business and deliver safe water.

In addition, particularly with the implementation of supply augmentation options and with the impact of climate change on traditional water sources, ongoing investment in R and D and new innovative testing and measurement regimes will be required to ensure ongoing water quality with traditional or changing water sources. This should be considered as a necessary cost of business, and industry needs to be supported to allocate adequate investment in this area. This is a real example of potential gains and dynamic efficiencies and helps to ensure ongoing provision of quality water during the implementation of different supply solutions.

A third issue that WQRA would like to raise is that there needs to be the investment in the development and maintenance of capability and capacity within the industry. It is concerning that to change a tap washer a plumber must complete an

appropriate competency based training qualification, while the manager of a water treatment plant to service more than three million people can be engaged without holding any formal qualifications at all.

It is, in WQRA's view, critical that quality frameworks and qualified operators for water supplies are implemented. Competency based training and qualifications for operators, as well as a skilled professional workforce within the water industry, will help to ensure the provision of safe water for consumers. Investment and activities that encourage this should be very highly supported. This requirement is becoming more of an imperative because of the issues associated with an ageing workforce and the loss of significant industry but also corporate knowledge in operating water services. There needs to be consideration on how to mitigate the issues associated with a loss of key staff, which will range from senior management through to technical operators, to assist in limiting the impact on the water industry in the long term and the provision of safe water to consumers.

The fourth one that I'd really like to raise again, that I've previously touched on, is the continued investment by the industry and high-level investment and focus by the government in cutting-edge R and D in priority areas of water quality and the implementation of innovation through technical transfer of research outputs. While there has been a focus on water-related research, including three new centres of excellence recently, much of the research is focused on water quantity, not on priority areas associated with water quality and public health, which today is significantly underfunded at a governmental level. R and D is a crucial activity that not only informs utilities how to improve system performance and ensures the provision of safe water but also assists the utilities and regulators in ongoing development of evidence based regulation guidelines to continually ensure safe drinking water and appropriate treatment of wastewater recycled water.

Australia to date has been a recognised leader in the development of safe drinking water guidelines, in the development of the ADWG. Ongoing research will lead to significant innovations that provide the urban water sector the tools, knowledge and capabilities to underpin safe supplies now and into the future. The World Health Organisation recognises that throughout the world the infrastructure alone does not deliver water security, either quantity or quality, and that support for management through R and D operations and maintenance is necessary.

Lastly, while I recognise the focus of this issues paper is on Australia's urban sector, the definition provided in the paper captures small townships and communities, including Indigenous communities. These smaller, often regional or rural, areas often have additional challenges because of the community size and therefore both the human and financial resources available. This can hinder the provision of safe drinking water in an efficient and cost-effective manner due to the

lack of economies of scale that one would find in the larger cities. It is important that, in looking at the reform of an industry, consideration should be specifically given to the challenges faced in delivering water and wastewater services in very remote and rural areas. It is important to remember that utilities responsible for the provision of the services, such as Power and Water up in the Northern Territory, often face extreme difficulties to simply deliver basic services for these communities and often at an increased cost, and that efficiency gains are near impossible to achieve if cost is the only consideration.

In closing, I would like to reiterate that delivery of water and sanitation is a public-good activity which should be provided to all consumers, regardless of personal wealth or locale. Australian utilities are tasked with balancing numerous and diverse challenges in successfully achieving the provision of safe water and in managing wastewater supplies and recycling of water. If undertaken at the required level, it could be argued the true cost of water is not being paid by any user, whether they're in the urban, industrial or agricultural sectors, and reform to reduce cost does not seem in line with this philosophy. Utilities should continue to be supported so that they can continue to do their businesses, both now and in the future, in implementing legislative requirements for drinking water, wastewater and recycled water.

In addition, the government regulators should be fully articulated and funded so that they are able to provide good regulation and guidelines for the industry to continue to provide the safe water. It is also crucial that Australian utilities be in a position to be able to respond to future challenges that lie ahead in delivering safe water supplies for urban populations through ongoing investment in both infrastructure and innovation. Thank you for your time today and for listening to the submission from WQRA.

DR CRAIK: Thanks very much, and thanks very much for your submission that you sent in. I'd be interested to understand the nature of water quality regulation in Australia and the extent to which it's national, the extent to which it's state and the extent to which it's local. Is there any kind of framework in which that sits or is it just kind of who gets in first? So how is it set up?

MS DAWE (WQRA): At the moment we've got - particularly for drinking water, the Australian Drinking Water Guidelines are the basis and the framework which most operators and utilities operate by. In some states of Australia there's either legislation that's been implemented or is currently being implemented, such as in South Australia with the drinking water acts.

DR CRAIK: And they reflect the national drinking water guidelines?

MS DAWE (WQRA): They do adhere to the Australian Drinking Water Guidelines but again they're guidelines as opposed to absolutes. One of the difficulties that we're being tasked with as well is that, particularly with contractors and consultants coming into the market, because - it's very similar to when the Corporations Act was divided into the state acts as well - it's difficult for them to go across state boundaries because there often will be different legislation or different emphases, although everyone theoretically adheres to the ADWG.

DR CRAIK: Does your organisation think it would be more efficient or effective if there was a national law and the states just implemented that national single law?

MS DAWE (WQRA): That's a tricky one in terms of there's a lot of debate at the moment of whether a national framework and national regulation would be easy to adhere to or not to adhere to.

DR CRAIK: But the drinking water guidelines are national and if there is a standard that's safe to drink - I mean - - -

DR MUNDY: And given everyone who's providing drinking water is a corporation and clearly could - - -

DR CRAIK: Wants to meet it.

DR MUNDY: Wants to meet it.

MS DAWE (WQRA): They do.

DR MUNDY: And clearly is caught under the ambit of the corporations power of the Commonwealth.

MS DAWE (WQRA): It's also the fact that, as we discussed before, in Queensland and New South Wales there are smaller entities producing water that, due to economies, it's difficult for them to sometimes - the ADWG has quite stringent - particularly the new ones coming out. It's very difficult for them to actually meet some of those guidelines. If you look at the smaller communities within regional areas or communities where they're looking at bore water, it's very difficult to meet some of the salinity guidelines or otherwise total amount of carbon within water and things like that. So if you implemented a national framework without taking into consideration some of the aberrations that might occur because of the water sources that they're dealing with, they'd be noncompliant all the time.

And then there's a perception that those utilities aren't either doing their job or they're not providing safe drinking water. It's often the fact that they're doing their

best to provide the safe drinking water within the boundaries that they have, but it might be that the total level of salt is higher than what the ADWG says, whereas they might have a 100 per cent E coli compliance. So it can be very difficult.

DR CRAIK: I guess if you could take into account some way of drafting legislation, would you think it was a more effective system though? Is it better than having a whole range of different conflicting - - -

DR MUNDY: Because a state law in Tasmania that implements the drinking water standards is going to have the issue of boiled water alerts as much as Commonwealth law is going to have.

MS DAWE (WQRA): I think in the first instance - you know, from my own personal perspective - starting off with state based legislation is a really good step, and I think that that's our first point of call. If we wait for national regulations to come in we'll be waiting a long time, so I think in the first step it's good to have the state based regulations coming through, again as long as they're based on the ADWG, which they are, and there are tools that are coming into play to help people with compliance as the new legislation comes in. But again, there are costs associated with compliance itself in terms of auditing and things like that that people are starting to grapple with. I think they need to maybe have support and understanding when the new legislation comes through, and also how they can be compliant with the new legislation.

But in answering whether a national framework would be better, I think that having national guidelines that are promoted and people are educated to uptake, but also supportive for an economic base to maintain, is probably better than just having an across-the-board national regulation which might be difficult for people to actually have compliance with.

DR CRAIK: I guess organisations are often getting better and better at improving the quality of water, including aesthetics and things. Do you have a sense at what point it's too expensive to keep improving water, just for the taste or whatever, or do you think that that's not an issue? But is there some point when ever-cleaner water, if it's acceptable to drink - when those who want ever-cleaner water should actually pay for it, as opposed to the community paying for it?

MS DAWE (WQRA): I think it comes back to fit for purpose. I think that drinking water again has a standard that we should comply with and that if water is compliant with the ADWG and it's safe water in terms of it doesn't have pathogens and bugs in it, but also in terms of taste and odour - if consumers are complaining to their local provider, such as a complaint recently in Victoria that there is a taste of the cold tar that's coming from the pipes, I think that research is actually funded by the utilities.

But whether that cost is passed on to consumers would depend on what that particular complaint was, and I think that there has to be a degree of rational thought behind it. You can't have ultraclean water, because it just costs too much to be drinking, the same as I don't think that all water should be treated to drinking water standards if it's going to be used for watering parklands and things like that. What we need to ensure is that that type of water is fit for the purpose it's used for and that it's treated to that standard; again, as I said, not under or over-treated.

DR CRAIK: One final question and then I'll hand over to Warren. Do you have a view about whether recycled water should be introduced directly into potable water supplies or should it go through a dam or what?

DR MUNDY: Or not at all.

MS DAWE (WQRA): I think again there are a lot of issues that have to be dealt with. I think if the quality of that particular water was at a drinking water standard, from a technical and scientific point of view there are no real issues other than the integration of that water into an already standing water source. But I think there are a lot more social issues that need to be dealt with and I think there's a perception out in the community that it's never going to be clean, even though it might be cleaner than what we drink every day out of the tap. So I think that, before it was ever introduced, you'd have to make sure it was a good economic investment. You'd have to deal with the social issues more so than the technical and scientific issues.

DR CRAIK: Thanks.

DR MUNDY: Just on that question, whose role do you think it is to make this social - because it's clearly the case that there is a component of the water consumed in this city which in a few weeks' time will have been the water that was running down my street in Canberra today.

MS DAWE (WQRA): That's right.

DR MUNDY: We don't talk much about what happens to the treated sewage of the ACT. I guess I'm interested in who's making that. Is that a decision that politicians should be making or is it a decision that the health regulators should be making? Who do you think should be making those decisions and how should they be making them?

MS DAWE (WQRA): I think it should be a combination of key stakeholders that make this decision. I don't think it should lie specifically in the political sphere. I think that health regulators should have a significant input into it, but I think it also

comes down to education, and who has the control of education will probably depend on whose department has the money at the time. But I think it's also about ensuring that the science sits behind it so that the public has the opportunity to understand that there has been a significant amount of science and that it's not people just - as I said, it comes down to education of people and making sure that the marketing is sound, but that there is the science that underpins that as well.

To whom it sits - it depends on the states as to who has got regulation for that and control of that, but also the ultimate responsibility for making sure that it's safe when it goes in - should also probably have part of the control of how to educate the public, because they're going to be ultimately responsible for delivery.

DR MUNDY: Now that the drought is over we're seeing that a number of water sources which were previously considered entirely fit-for-purpose for human consumption - now because dams are magically over 40 or 50 per cent full - are suddenly no longer fit for human consumption, and a lot of these decisions - not all of them - are being made by health regulators. Do you think the decisions that the health regulators are making about the acceptability of sources should be made more transparent and, indeed, subject to some administrative law arrangements, very much like economic regulators in some cases are subject to appeal and merits review - most of the Trade Practices Act works that way - and whether there needs to be more transparency and accountability in the decision-making processes of health regulators?

MS DAWE (WQRA): I think that would be, in a way, very difficult to achieve because often health regulators are acting on political imperative in terms of they've been given direction. I think sometimes it's not a health issue as to why schemes are put on hold, because we've had rain and things like that. There have been surveys done on social perception and, if it's socially not acceptable at the moment, then sometimes schemes will be put on hold. It's easier to sell a product if there's an urgency about it than when we don't urgently need it.

DR MUNDY: Do you think these outcomes would be better if we constructed a legislative arrangement where that sort of influence - and it's not always apparent - was actually brought into the public spotlight so that the political influence would be more transparent? There are lots of areas of law where ministers may direct agencies to do certain things in certain ways and those directions need to be transparent.

MS DAWE (WQRA): I think it's about introducing testing regimes for water sources and I think that then if people can see that the water sources are being tested and that they are at a compliant level, that would certainly assist the health departments in saying, "This water is fit for purpose, but this time because of economic reasons or because we actually don't need to pump in" - and, again, as soon

as you start pumping into dams and things like that from an alternative water source, there's a lot of cost involved. The water is not as cheap as you would have in a catchment area; certainly to treat water is a very expensive thing to do. So often it's not just about the health reasons, about water quality. It might be still a very good quality but there might be economic reasons why you wouldn't do that, and I think that having the testing regimes that are currently in place that we use to test water before it's sent out for drinking - whether it's through a catchment or after a treatment plant - can be implemented, and they are implemented when they're required.

DR MUNDY: You made a number of observations in your presentation about a concern that some form of micro-economic reform may lose the focus on quality, drinking quality standards, and this is an issue that exists. It's a safety question.

MS DAWE (WQRA): That's right.

DR MUNDY: And safety exists in a lot of industries - the aviation industry that I work in a lot. My question is: do you have any evidence - and we've had a lot of micro-economic reform in the water sector; there's a view that we probably need more of it, but we've certainly had a lot of it - that water standards have been compromised by this drive on costs, either by utilities, by resources being ripped out by treasuries or economic regulators not allowing the full cost of public safety regulation through into final tariffs?

MS DAWE (WQRA): The evidence that I have is not hard evidence per se; it's more about the pressures that are put on particularly the regulators, and being able to develop new legislation as we're looking at different sources coming on board. To put it bluntly, there's probably not enough money in the health departments and in the regulators to actually fund ongoing regulation as we continue. There's just been a review of the ADWG and, as soon as that review was finished, that particular water quality advisory committee through the NHMRC has now been disbanded, and of course we need to have rolling reviews of regulation to ensure that, as we bring new sources on, those new sources are reviewed and that we have new testing regimes, and as new bugs start coming down with climate change, as we start heading up different areas, that we have the correct testing coming on board.

I think that's one of the things: it's one of those hidden costs that people don't see. Whether that's a direct result of micro-economic reform, it's certainly a result of not having a big enough bucket of money to do everything we'd like to. We never do, but one of the concerns that we have as an organisation is that, with climate change coming on board, then when the carbon trading emissions scheme was coming on board and then of course all the energy efficiencies, a lot of resources are being directed into those types of areas. What we don't want to see is that, because there is a significantly reduced bucket of money, the money dedicated towards water

quality, and particularly on the ongoing research and maintenance of water quality, is reduced to such a level that there are issues. I don't believe there are issues at the moment, but what concerns me is that ongoing there could be issues.

DR MUNDY: If I could just ask one more question. So is your concern about the amount of money that's available within the water utilities themselves to achieve compliance with the standards or is it the amount of money available, which is ultimately a pricing issue because that's where they get their cash, or is it an issue about the resourcing of health departments, research institutes, to develop the standards and monitor the activities of the water companies? One is a pricing problem and the other one is essentially a budgetary allocation problem.

MS DAWE (WQRA): That's right. Both actually.

DR MUNDY: Do you have a sense of which is greater?

MS DAWE (WQRA): It's hard to say, and I won't comment on that.

DR MUNDY: Okay.

MS DAWE (WQRA): But I'd just like to finish on that question and say that the water utilities do a good job at the moment and I don't think that they would - like, a water quality incident for a utility generally results in a commission hearing and so people would do everything to avoid that, but I inherently believe that the water utilities also have quality standards within their own organisations; that they want to supply good-quality water and will do everything possible to do so. But I think if they're - given the fact that they now have other issues that they have to spend money on, I think we have to be very careful about how much we squeeze them in terms of declining budgets and looking at bottom lines specifically.

DR CRAIK: Okay. Thank you.

MS DAWE (WQRA): Thanks very much.

DR CRAIK: Thanks very much, Jodie, and thanks very much for your submission, which was very helpful. We're running a bit late but we'll take a morning tea break until 10 past 11 and then we'll start again and we can run till 10 past 12 as our last person who was scheduled today is not appearing. So we'll have a brief morning tea, about 12 minutes for morning tea, and then we'll resume. Thank you.

DR CRAIK: Welcome and thank you. Could I ask you, before you start, to say your name and positions for the record, and then if you'd like to give a brief introduction we'd be happy to hear it. Thank you.

MS GRANT (DFW): Julia Grant, executive director of the policy and urban water division of the Department for Water.

MR MORTON (DFW): Steven Morton, manager policy and strategy, in the policy and urban water division of the Department for Water.

MS GRANT (DFW): Thank you for the opportunity to provide an overview of the state government's submission to the Productivity Commission's inquiry into the urban water sector. As I said, my name is Julia Grant and I'm the executive director of the policy and urban water division in the Department for Water. The department has the lead responsibility for managing the state's water resource and we're leading a significant proportion of the government urban water sector reforms. I'd just like to add that this is a relatively new division and new department. There was machinery of government changes which took effect from 1 July and which created the Department for Water. Previously we were the Department of Water, Land, Biodiversity and Conservation and so we have a specific focus on water, and the creation of the policy in urban water division was a deliberate reason for putting urban water in there, because previously the former department didn't really have a focus on urban water. It was a bit ad hoc and now we're sort of stepping up and trying to coordinate policy.

We're committed to the state's water supplies, that they are secure, safe and reliable and are able to sustain continued growth for the next 40 years, and of course urban water is an important focus of our approach to water management. The further reform, and what we're sort of really basing a lot of our submission on today, is part of Water for Good, which places the state in a strong position for the efficient and effective operation of the urban water sector over the coming years. We'll provide just a brief overview. In keeping with the actual submission, which you've read, we haven't attempted to answer each of the questions posed but will just give an overall forward direction of what's happening in South Australia.

As mentioned, central to the approach is Water for Good, which was released in June 2009. This work was coordinated by the Commissioner for Water Security, Ms Robyn McLeod, and it sets out our broad objectives for water security and has 94 actions; a range of people, agencies, are responsible for them. We established an adaptive management approach through Water for Good and that basically ensures that the state is well placed to meet new challenges and to manage our future water demands, which are obviously climate change and population growth.

I'll just go through the key elements in the submission. Consistent with Water for Good and government policy, the South Australian government will maintain ownership of SA Water. In the immediate term it will be retained as a vertically integrated service provider. However, these arrangements will be underpinned by improved third party access arrangements and the introduction of independent economic regulation in order to encourage efficient pricing, innovation and competition.

So further to that, we will be establishing new regulatory arrangements for the water and wastewater service industries. This is a key action in Water for Good and it's also consistent with state government's commitment under the National Water Initiative. A draft water industry bill was tabled in the South Australian parliament on 23 November and it forms the basis for further consultation with stakeholders over the summer recess of parliament. The bill will put in place legislative arrangements for an efficient and appropriate framework for the regulation of the water industry. In summary, the proposed act will cover water demand and supply planning arrangements. It will appointed the Essential Services Commission of South Australia, or ESCOSA, as the independent economic regulator. It provides for licensing arrangements for retail service providers and also provides for the technical regulation, initially for the plumbing sector.

The South Australian government determines prices for drinking water supplies and wastewater services provided by SA Water, and a new process will be set in place to set prices for 2011-12 as a lead-in to the independent economic regulation. This process will involve a pricing submission from the SA Water Board to the South Australian treasurer and minister for water, who will then have to draw on expert advice from ESCOSA in order to set the price levels. Pricing arrangements for 2011-12 will then be considered and approved by cabinet and, following this, ESCOSA's first pricing determination on the water industry will cover the four-year period from 1 July 2012 to 30 June 2016.

The introduction of ESCOSA as the independent economic regulator seeks to ensure the protection of long-term interests of the South Australian consumers with respect to price and reliability of essential water services. In doing this, ESCOSA will likely have regard to promoting competitive and fair market conduct, misuse of monopoly or market power, facilitate third party entry into relevant markets, promote economic efficiency, ensure consumer benefits from competition and efficiency, facilitate maintenance of the financial viability of entities in the water industry and provide for incentives for long-term investment and promote consistency in regulation with other jurisdictions. The government believes that this arrangement will provide the best means of ensuring the state's water security, as well as water efficiency in the sector.

Improvements to third party access arrangements for significant infrastructure is a significant change for South Australia and it's being considered at the moment. SA Water already has in place a number of voluntary access arrangements, including with the Barossa Infrastructure Ltd for the bulk water transfer from the River Murray to the Barossa region. The specific details of the new third party access arrangements are still being finalised and worked through. Nevertheless, it's anticipated the arrangements will be consistent with the relevant provisions in the Trade Practices Act, which will include obviously the right to negotiate access to significant water infrastructure in South Australia, provisions for dispute resolution and regulatory pricing principles.

An important part in the draft bill, as well as Water for Good, is for the government to have an adaptive management approach for water security and it lists the following elements, which include a set of water security standards, an assessment of the state of the resource, analysis of demand pressures, governance and management arrangements, options and assessments, and measuring and monitoring. These demand-and-supply statements are in the bill and they are designed to have eight for the eight NRM regions of South Australia, and they really provide assessments of the future demand and supply and take into account climate change and population growth scenarios. The first one is currently being finalised for the Eyre Peninsula. If there is a demand shortage identified in these plans we need to trigger an independent planning process which the minister must do.

With regard to stormwater and wastewater management and water-sensitive urban design, South Australia has been fairly proactive in those areas. We're considered a leader with regard to the capture and re-use of stormwater and wastewater and, to have a far more integrated approach, in September this year the minister for water announced the establishment of a stormwater task force with all the relevant stakeholders to inform the development of a stormwater strategy. This includes the department, Local Government Association, Stormwater Management Authority, the Mount Lofty Ranges NRM Board and SA Water. Actually there's also a representative from the Goyder Institute.

We recycle the highest percentage of treated wastewater in any Australian capital city. It's currently 31 per cent with a target of reaching 45 per cent by 2013 and we want to encourage decentralised wastewater recycling schemes.

With regard to water-sensitive urban design, we haven't had a proper policy approach as yet. It's been a bit ad hoc, with a technical manual that has been developed in one department; however, responsibility has now been given to the Department for Water, and we're working with the Goyder Institute, in particular University of South Australia and the CSIRO, in developing water-sensitive urban design.

Water restrictions and permanent water conservation measures: with the Adelaide desal plant due to deliver its first water in April 2011 and with, obviously, substantial rains, water restrictions have been lifted as of 1 December and been replaced with permanent water conservation measures, which are now called Water Wise measures. South Australians have been fairly receptive to restrictions and these measures. In April in 2010, even though some of the water restrictions were eased, consumption still reduced, and under the Commissioner for Water Security there's quite a substantial community education process and web site and campaign that's been put through, where there's some extra information on SA Water bills.

I think that's about it really. Thank you for the opportunity to present. I would just like to add that, given the machinery of government changes, I've been in this position for four months, so I would just like to flag if there are any specific questions I'm unable to answer, that I will take them on notice and I will seek to get an answer for you.

DR CRAIK: I'm sure after four months you're an expert. I understand the challenges. Thanks very much, too, for your submission. It's a good, detailed one, giving us some good information. Do you see a role for the Commonwealth government in the future reform of the urban water sector?

MS GRANT (DFW): Yes, I do. I'll just give one example: the stormwater management program that we have. There was a collaboration of the state government with local government and other stakeholders in accessing significant Commonwealth funds and we were successful to get nine stormwater projects up and running. I think with regard to urban water, and stormwater specifically, obviously each state and each jurisdiction is at varying levels of progress on what's happening. I think it would be good to have an integrated approach as to how should we approach urban water with regard to wastewater and stormwater. So, given the Commonwealth have funds - well, as opposed to the state government at the moment - - -

DR MUNDY: I think you've got a problem with the tense of your verb, but anyway.

MS GRANT (DFW): Pardon?

DR MUNDY: The Commonwealth "did" have funds.

MS GRANT (DFW): Did have funds. Well, given that they had funds, I think that if these pots of money could be used as in thinking: Well, what do we need? Where are the gaps in urban water? What should we think about? Should we do a second

round of more stormwater projects in Adelaide or should we think about investing in something else? Steve, do you have anything that you would like to add?

MR MORTON (DFW): No, nothing specific in regard to the Commonwealth's role.

DR MUNDY: Just before Wendy moves on, it's been put to us by some people in submissions that we actually need to get the Commonwealth out of the business of giving grants for urban water, on the basis that it distorts cost-reflective pricing and it poses regulators all sorts of interesting challenges about what they do with projects which enter the asset base which have not been funded, because then costs aren't looking like long-run marginal cost and it all gets a bit confused. Is that a matter which, going forward, the government would give guidance to ESCOSA on, or it would hope ESCOSA would be clever enough to work it out itself?

MS GRANT (DFW): I'd say we would work through it with ESCOSA.

MR MORTON (DFW): I think in general we would rely on ESCOSA's expertise to provide advice in that regard. In terms of your comment on Commonwealth funding, I take your point about distortions to the market. However, if there was future Commonwealth investment in water infrastructure or water programs I think there's an opportunity to improve collaboration with the states to ensure that what's being invested in actually matches with what our future plans for management are.

DR MUNDY: My concern about distortions is more in major capital cities than perhaps in - - -

MS GRANT (DFW): Regional areas.

DR MUNDY: Where the communities can't support it.

MR MORTON (DFW): Yes.

MS GRANT (DFW): It may be a timing issue. It may be investment to a certain point and then once we have sort of more a mature - - -

DR MUNDY: Yes, okay. Thank you.

DR CRAIK: Do you have views on the current bans to rural urban trade of water entitlements?

MS GRANT (DFW): My depth of knowledge wouldn't be able to answer that.

MR MORTON (DFW): Are you talking more generally across Australia?

DR CRAIK: Yes, as a general question.

MR MORTON (DFW): I mean, we have as a state purchased water from the Murray-Darling Basin to supplement our critical human needs when needed during the drought. I guess the other point in that regard is that we have placed a challenge through the High Court which is now being heard through the Federal Court against the current 4 per cent limit imposed by Victoria and the need for that to be removed as urgently as possible.

DR CRAIK: Did South Australia consider, in looking at additional water rights - I know you've purchased a fair bit of entitlements from irrigators for Adelaide's water supply, but did you look at purchasing all the water entitlements rather than the desal, as an alternative to desal?

MS GRANT (DFW): I think the focus that we had in that drought was that we wanted a climate-independent source of water for the city. That was a big driving factor, as was also South Australia having control of its own destiny really, investing in something so that its population and the government can say, "We have invested in a climate-independent source of water," that we are not reliant - well, we will be. It will supply 50 per cent of the urban water, drinking water, but it was important to lower our dependence.

DR CRAIK: Even though it was probably significantly more expensive than purchasing high-security water entitlements from up the river.

MS GRANT (DFW): I think that, given the drought and given some quite scary scenarios that were presented to the government during that time, it was considered the best option.

DR MUNDY: Were those scenarios ever made public? Was the government decision-making process transparent, or was it cabinet-in-confidence advice and cabinet made the decision?

MR MORTON (DFW): My understanding is it was a cabinet process.

MS GRANT (DFW): Yes, it was a cabinet process.

DR CRAIK: In the new process there's a proposal for an independent -

> The minister has discretion to establish an independent water planning body to deliver this role if the need arises.

I'd be interested in an interpretation of what "if the need arises" actually means. Does that mean it would just kind of be brought together for the purpose? But do the arrangements envisage that it would be transparent, that all the options would be out on the table, with the cost-benefit analysis and all the normal stuff? Is that what's proposed?

MS GRANT (DFW): Yes. An independent planning body is in the event that during the regional demand-supply assessments there is a shortfall, and if there is a shortfall the minister must trigger that independent planning process. It will be independent and has the ability to go to the market for some of the solutions and have a cost-benefit analysis undertaken.

DR CRAIK: And it will all be transparent and publicly evident?

MS GRANT (DFW): Well, it's currently - we haven't - the government - - -

MR MORTON (DFW): That's a discussion we haven't had with our minister as of yet - - -

DR CRAIK: I see.

MR MORTON (DFW): - - - and cabinet, but obviously we could see the benefits in it being an open decision-making process.

MS GRANT (DFW): Yes.

MR MORTON (DFW): And I think fundamental to the process will be a high level of community engagement - - -

MS GRANT (DFW): That's right.

MR MORTON (DFW): - - - in assessing the solutions.

DR MUNDY: Can I just ask one more question. So it will do its work, it will form a view. Will it then make the decision or will it provide advice to government?

MS GRANT (DFW): It will provide advice to government.

DR MUNDY: And if the government chooses not to take that advice, will the government issue a statement of reasons as to why, or is that something not yet to be determined?

MS GRANT (DFW): I think that's not yet to be determined.

DR CRAIK: How will this independent planning body's independence be upheld? Are all the arrangements for independence clear, or are all those sorts of things not yet clear?

MR MORTON (DFW): I guess it's fair to say that at this stage it's not clear. It's a commitment in Water for Good for it to be an independent process. We are working currently with the minister to set the parameters around how that might actually work and what the definition of "independence" is, but in general terms "independence" is independent to other planning processes that government may have in place, such as water allocation planning processes, but also will utilise a rigorous cost-benefit analysis process to present the full range of demand management or supply augmentation options to the minister and the government.

DR CRAIK: This body will be set up if the need arises. Who's monitoring if the need arises?

MS GRANT (DFW): That's through the demand-supply assessment.

DR CRAIK: Yes, but who actually does that?

MS GRANT (DFW): It's undertaken by the Department for Water.

DR CRAIK: So you guys do it?

MS GRANT (DFW): Yes, but it's in consultation with existing monitoring going on, so we may be working with SA Water and there's actually a group that works across, so the NRM board, SA Water - and we have an obviously quite strong scientific monitoring and innovation unit that has an important role in that assessment as well.

DR CRAIK: In your department?

MS GRANT (DFW): Yes, in our department.

DR CRAIK: In 10 years' time, when water is kind of no longer on the boil, it's not a hot issue any more - departments change, and things like that - I mean, is there some kind of guarantee in the strategy that this entity remains?

MR MORTON (DFW): I guess in general terms it's a commitment under Water for Good, so we have to develop regional demand and supply plans for the eight regional NRM regions as well as an overall statewide demand and supply statement,

and these need to be updated on an annual basis. So I guess in terms of an ongoing commitment, it's outlined in Water for Good, which is a cabinet-endorsed policy position.

MS GRANT (DFW): In addition to that, there's a commitment in the draft bill, so the minister has to report back to parliament on the regional grants.

DR MUNDY: And those supply-demand statements are publicly consulted on, or at least publicly - by the sound of things, if you're going to do them every year, you're not going to put out drafts for public comment, you're just going to issue them. Is that how it would work?

MR MORTON (DFW): In the early stages when they're developed first off, for each of the regions there will be a community engagement process whereby the community will be informed of them being developed and the methodology being used to develop them; and following their completion, they will be informed of what the findings are and the implications for their community.

DR MUNDY: I suspect as time goes on the need to consult on them will become less compelling.

MS GRANT (DFW): Yes. I mean, they're relatively new and having to explain how they differ from water allocation planning processes and all that type of thing requires that consultation.

DR CRAIK: Can you explain the role of the Commissioner for Water Security, vis-a-vis the department? I mean, what's different about that role as opposed to the department's role?

MS GRANT (DFW): It's changed. With machinery of government changes, the role of the water security commissioner has changed as well. She has now taken on the role of largely monitoring and evaluating the Water for Good plan as well as the whole community education campaigns. That's largely her role as well.

DR CRAIK: Does she publish reports on how progress against Water for Good is going?

MS GRANT (DFW): Yes. They've just done the first one. I don't anticipate it will be in this format the next year, but yes, we've just recently - the minister tabled it in parliament, I think again on 23 November. There are 94 actions in there. Some won't be achieved; the majority are on track. They are sort of consistent with the measurements that we're using for South Australia's Strategic Plan. One of them wasn't necessary, and that was the Pomanda - the weir, Wellington weir.

MR MORTON (DFW): I guess the other thing to mention in regard to the progress report is that Water for Good is ultimately an adaptive management approach; thereby, as we move down the process, failure to meet the implementation of specific actions within a particular time frame is not necessarily a failure. It is more likely to be a result of the fact that we're working through the issues.

MS GRANT (DFW): That's right.

DR CRAIK: Yes, I understand that. Moving on a bit, the permanent water conservation measures that you have, how were they decided upon? What was the basis for the decision? Was any cost-benefit analysis done of those? How did they come to be?

MS GRANT (DFW): Largely it was determined within SA Water and under their system it goes through cabinet and the department provides advice through that process. I don't know specifically what SA Water did with regard to a cost-benefit analysis.

DR CRAIK: So in the future under Water for Good, will SA Water or the Department of Water or whoever - who will make the decision about any further restrictions or not?

MS GRANT (DFW): I think this is going to be an area that's going to be very interesting for the state and for SA Water. We've moving into - I mean, I've heard the changing paradigm, shifting paradigm on a number of occasions. So there is definitely going to be a changing in roles with regard to policy development and we see the state government having a much stronger role in policy development. That is just one of the issues that we'll need to sort through with SA Water.

DR CRAIK: In relation to the policy, is it a policy about how further water restrictions might be imposed or is it a policy about deciding that water restrictions come into place tomorrow? Is it setting up the framework? I guess I'm getting at, are you going to make the decisions about the water restrictions or will you set up the framework for somebody else or whatever to make the restrictions?

MS GRANT (DFW): I would foresee that the department, given that we are ultimately responsible for the state's resources, would be providing advice to the government.

DR MUNDY: So they won't be in these supply-demand documents that have been produced for each region, because obviously a demand restriction is an alternative to a supply augmentation.

MR MORTON (DFW): Yes, that's right. It won't be in the demand-supply statements as such. The demand-supply statements are purely a projection and assessment of the resource and the demand and supply challenges out to 2050. The independent planning process that may be triggered if we identify a demand-supply imbalance needs to consider both demand management as well as supply augmentation issues and undertake a cost-benefit analysis of all of it.

DR MUNDY: So that's where the consideration of - - -

MS GRANT (DFW): Yes.

MR MORTON (DFW): If it was going to apply on a specific regional area, yes.

DR CRAIK: Okay. The desal plant: can we ask why, if you know, you ended up with a 100 desalination plant as opposed to a 50? Wasn't it initially going to be a 50-gigalitre plant? What's the reason for the number?

MS GRANT (DFW): Again, this is largely in the realm of SA Water, but it was basically negotiated through the premier and the minister for water and the federal Commonwealth minister. I think with regard to - I mean, if you have a desal plant going at full bore, 100 gigalitres, it supplies 50 per cent of Adelaide's drinking water. The actual process of determining that figure? I wouldn't be able to tell you that.

DR CRAIK: Okay. In future, would that be the realm of the independent planning body, determining how much was needed? Would that be the realm of the independent planning body that's proposed under the new arrangements?

MS GRANT (DFW): Potentially. I think with some regions, where supply augmentation may be looking at desal plants, the independent planning body will receive the information and the basis of what the shortfall is. Then, through that process, potentially that's where that decision will be made.

DR CRAIK: That would also apply, say, for Adelaide? I mean, in the event, and let's hope it doesn't happen, that water dries up totally and we get a much worse situation than we had a couple of years ago and so more water was needed for Adelaide than what was currently in the system - - -

MS GRANT (DFW): According to Water for Good, that would obviously trigger an independent planning process.

DR CRAIK: And they would make the recommendation.

MS GRANT (DFW): And I anticipate that would be a very senior, important, independent planning process.

DR CRAIK: I would think that's right. Just one other question. In Water for Good, the targets for wastewater recycling and stormwater recycling - I guess the question is, who decides those targets, and is it consideration of costs and benefits or - - -

MS GRANT (DFW): With regard to the stormwater targets, that's basically based on the urban stormwater harvesting options study that was done by consultant Wallbridge and Gilbert. They did a study which said that 60 gigalitres we could reasonably actually supply. What actually hasn't been done as yet is the demand, a demand piece of work. So at the moment we have a lot of individual targets in Water for Good, but work we do really need to engage in is the integration of the targets and how a wastewater target integrates with a stormwater target. We've also got in this plan a commitment for a master plan for wastewater and a master plan for stormwater by 2012. They're actually huge pieces of work.

DR CRAIK: Yes, they are.

MS GRANT (DFW): So 2012 is a very ambitious time line.

DR CRAIK: Who does those? The department?

MS GRANT (DFW): I beg your pardon?

DR CRAIK: The department does those?

MS GRANT (DFW): The department is responsible for those targets, yes; so through the Goyder Institute, with the likes of the University of Adelaide and looking at how we best integrate; and even though we have some of these targets in isolation, we actually do need to rethink how they interact with each other and we do need to do further work on cost-benefit analysis and things like, I suppose, whether stormwater should be potable or not. That also should be subject to cost-benefit analysis.

DR CRAIK: Just one other question before I hand over to Warren. In your graph when you've got the little figure of the adaptive water security management arrangements - and I accept it's only a figure - it's got on the right-hand side "new independent assessment", "new independent planning process" and it goes to the options, and then it's got a list of things to look at under "assessments", but it doesn't seem to me to have "cost-benefit" under that list of things you might look at when you're doing the assessment, which kind of surprised me a little bit. I guess my

question is: that doesn't mean it's ruled out, I hope?

MR MORTON (DFW): No. I think the simple answer is "no".

MS GRANT (DFW): No. That will be an important part of the process.

DR CRAIK: I would have thought it might be up there somewhere. All right.

DR MUNDY: Can I just come back to some issues on economic regulation. I hadn't quite understood this. So ESCOSA in the first year is going to do its thing and then make a recommendation to government.

MS GRANT (DFW): Yes.

DR MUNDY: And government will make a decision and presumably at its peril ignore the advice of ESCOSA. In subsequent years, ESCOSA is going to do it itself, so ESCOSA will be the decision-maker? Is that the way it's going to work?

MS GRANT (DFW): Yes.

MR MORTON (DFW): Yes. So the process for the next financial year, as I understand, is that it's an interim process linking into the arrangements as set out in the bill.

DR MUNDY: Yes. And then after the first year ESCOSA will be on its own.

MR MORTON (DFW): Will have the responsibility.

DR MUNDY: And ESCOSA will do its normal public thing. Are ESCOSA's decisions subject to review, some sort of merits review, or is it "ESCOSA says" and is that it?

MS GRANT (DFW): With regard to what is actually outlined in the bill - and I will have to probably come back and confirm this.

DR MUNDY: No, that's all right. I'm just interested because obviously, for example, in the national electricity law decisions, the Australian energy regulator is subject to merit appeals and so forth. If that's the sort of issue, framework - - -

MS GRANT (DFW): There is some discretion in the government, but I'll need to confirm that, in the legislation.

DR MUNDY: Yes. I'm just interested in the redress that people may seek to any

decision that ESCOSA might make over and above, I presume, normal judicial review by the Supreme Court. Whilst we're on ESCOSA, you mentioned you're going to proceed down the path of an access law, for want of a better expression. I think you said it's actually been tabled in the parliament. Is it intended or is it like the statute in New South Wales or is it more like Part IIIA of the Trade Practices Act?

MR MORTON (DFW): This is for third party access arrangements?

DR MUNDY: Yes.

MR MORTON (DFW): I think the answer to that is that the Department of Treasury and Finance are leading that initiative. My understanding is in the bill that there's a commitment for them to release a discussion paper on the matter.

MS GRANT (DFW): Or the minister, yes.

MR MORTON (DFW): So I'm assuming through their process that they will consider the broad range of options that might be available in that regard.

DR MUNDY: Is there a stated policy reason why the government feels it needs a South Australian specific statute as opposed to simply relying on Part IIIA, or would you like to ask Treasury and get back to us?

MS GRANT (DFW): Yes, I think - - -

DR MUNDY: No, that's fair enough.

MS GRANT (DFW): I think in Water for Good there's a date of 2015.

DR MUNDY: Yes.

MS GRANT (DFW): There's enormous interest from obviously our water industry and the like for progressing this. The draft bill commits to a process as such that will bring that date forward, inasmuch as it will have some sort of discussion paper by 2012. However, we're just in the beginning of our consultation on the draft bill. Then that will be going back into parliament once it's introduced and then there will be further consultation.

DR MUNDY: I guess what I'm trying to get at is more about what's the perception of the policy problem? We had some evidence from the CEO of Sydney Water and in her view - to paraphrase this - one of the things that has been very much the case in Sydney has not so much been people competing against Sydney Water per se but

people being able to set up distributed systems and perhaps more opting-out, if you like. Is that the sort of environment that you're dealing with here? Is it more a traditional "compete with the incumbent" type of circumstance?

MS GRANT (DFW): We haven't seen the discussion paper as yet, so we're probably not well informed to answer the question.

DR MUNDY: Yes, okay.

MS GRANT (DFW): But we're acutely aware of the importance of third party access and the expectations of the industry.

DR CRAIK: One of the things that the NCC has suggested we might consider is getting everybody to agree, nationally, what monopoly infrastructure is and then actually declare all monopoly infrastructure so that people don't have to go through anything like a declaration process for access to monopoly infrastructure, so you actually remove one step, which in some industries has been shown to be very long and costly, from the whole process. Would you guys have a view about that?

MS GRANT (DFW): We probably wouldn't have a view at this stage.

MR MORTON (DFW): No, I don't think we would have a view at this stage.

MS GRANT (DFW): No.

MR MORTON (DFW): We definitely appreciate the commission's views on the possible benefits of that arrangement.

DR CRAIK: You might have a look at the NCC's submission, in which they raise that, in terms of your considerations.

MS GRANT (DFW): Yes.

DR MUNDY: You said that Water for Good makes a commitment to maintain SA Water as a vertically integrated, presumably statewide monopoly. There's a very broad range of institutional forms across Australia from SA Water and the Water Corp of WA at one end, through the regional models in Tassie and South Australia. Can you give us a sense of why the government opted for that particular model? Did it see it was more efficient? What were the reasons behind opting for that statewide utility rather than a regional one or perhaps going back to the council distributed model?

MR MORTON (DFW): My understanding was that it was considered as part of

the development of Water for Good and the primary rationale was that, given our population distribution and size, it was considered to be the most efficient mechanism to deliver water security in an efficient form.

DR MUNDY: So there was no consideration of having, like Victoria used to have, a metropolitan utility and a country utility?

MS GRANT (DFW): I think largely the population was the real - - -

MR MORTON (DFW): Distribution.

DR MUNDY: Country towns in South Australia are so relatively small. There are no Bendigos, Ballarats and Geelongs.

MS GRANT (DFW): No.

DR MUNDY: That's a problem.

MS GRANT (DFW): We have a few but nothing like the other significant cities.

MR MORTON (DFW): We don't have any significant major centres in the same - - -

DR MUNDY: And they're reasonably close to Adelaide, I guess, too. I'd just like to ask some questions about actual pricing structures. At the moment you have a system where you have a fixed charge and then rising blocks and you've got different numbers of blocks for commercial users and residential users and you've got a higher fixed charge for commercial premises. Can you explain why that's thought appropriate, or is it a quirk of history? I think the commercial one has two blocks, the domestic one has three and the start, the fixed charge, for commercials is higher. That's my recollection.

MR MORTON (DFW): Yes. I guess I don't have the background in terms of the rationale for that current pricing structure.

DR MUNDY: Would you like to take it on notice?

MR MORTON (DFW): We can definitely take that on notice.

MS GRANT (DFW): We can take it on notice. We would have to confer with SA Water with regard to that.

DR MUNDY: Yes. We're interested in how people are pricing things.

MS GRANT (DFW): The pricing, yes.

DR MUNDY: Look, I've got some other questions about how the size of the blocks are determined, so I guess more generally we would just be very interested in how the whole pricing structure has been arrived at over time.

MS GRANT (DFW): Yes.

DR MUNDY: We can perhaps then come back to you if there are any further questions we had on that.

MR MORTON (DFW): Sure.

DR MUNDY: There's been some discussion, and the commission itself has done work on pricing water to reflect its current level of scarcity, so the notion that if there's a drought, water prices go up, and when there's 100 per cent dam fill, the water price presumably comes down unless you pay to take it away. Does the South Australian government have any consideration to varying prices for water on the basis of its relative availability?

MR MORTON (DFW): My understanding is that scarcity pricing was considered as part of the development of Water for Good. I can't remember the specific section in there. It was not considered appropriate in the South Australian context. I don't know the rationale for that offhand. I'm assuming one of the issues would be administrative, in terms of the administrative costs of adjusting prices on an annual basis - along those lines - but I'm not sure exactly what the rationale was. But it was investigated in some detail.

DR CRAIK: Is there much on it in Water for Good?

MR MORTON (DFW): There's a paragraph I think, which says it was investigated and not considered appropriate in the South Australian context.

DR CRAIK: Okay.

MS GRANT (DFW): There wouldn't be much detail on it.

DR MUNDY: We didn't like it.

MS GRANT (DFW): You didn't like it?

DR MUNDY: Yes. I just want to ask a couple of questions about licensing and

health, and obviously third party access is going to require an economic framework but it's also going to require - - -

MS GRANT (DFW): Public health.

DR MUNDY: - - - a safety framework and connectability framework. Are all those decisions going to be made by ESCOSA, or is the licensing of a third party provider, from a health perspective, going to be done - or a new water source - by the Health Department and then ESCOSA will deal with the economic issues?

MS GRANT (DFW): My understanding is that it will be done by ESCOSA but it will be subject to rigorous standards. We have a very experienced and vocal Department of Health - David Cunliffe - with regard to water quality and health issues. So my understanding, it will be undertaken by ESCOSA but there will be obviously - - -

DR MUNDY: So on the health and safety issues it will act on advice from the Department of Health?

MR MORTON (DFW): I think that's my understanding.

MS GRANT (DFW): That's my understanding.

MR MORTON (DFW): It will be part of the licensing conditions that are established and they will be drawing on advice from relevant government agencies.

DR MUNDY: I know ESCOSA is more transparent than most state based economic regulators; presumably, then, the health and safety advice will have the same level of transparency, and the decision-making around that will have the same level of transparency as the rest of it. So it would all look the same.

MS GRANT (DFW): Yes, I think it would be consistent with what they would currently do.

DR MUNDY: So the normal transparency requirements of ESCOSA, and conduct of ESCOSA as well, would be likely to be reflected in that way.

MS GRANT (DFW): That's my understanding, but I will seek confirmation.

DR CRAIK: Only bother coming back to us if it's different.

DR MUNDY: If the answer is "no". We'll assume it isn't, because otherwise ESCOSA will have some issues. Just one other question: you've set a security of

supply standard - and I presume it's in Water for Good - of, I think, restrictions once every 100 years, and that obviously comes to costs. In forming that security of supply standard, was analysis done to say, "Well, okay, what would the cost of restrictions once every 20 years or once every 50 years?" or was one in 100 years a number which was arrived at by some other process?

MR MORTON (DFW): I think that the simple answer is that there was a whole range of analysis that was undertaken to inform Water for Good and, without being actually involved in that process directly, I'm assuming that there would have been an analysis of the various options and what would be appropriate from a water security as well as an economic perspective.

DR MUNDY: And that was part of a cabinet-in-confidence process, presumably?

MR MORTON (DFW): Yes. All the underpinning analysis and the Water for Good approval process is all part of a cabinet-in-confidence process.

DR CRAIK: Can I just ask, on that subject of restrictions, the Water for Good plan says:

> A comprehensive review has been undertaken of demand management programs interstate and overseas, together with an analysis of the relative costs and benefits of various demand management measures.

Is that review and analysis publicly available? You probably don't know now, but could you check and, if it is - could you let us know whether it is or not?

MS GRANT (DFW): Yes.

DR CRAIK: Because it would be really useful for us if it is available, and we'd like to know if it's not.

MR MORTON (DFW): Does that say that in the submission?

DR CRAIK: No, it says it in the Water for Good.

MR MORTON (DFW): Okay. Yes, I think my understanding is that a lot of that background information and analysis that was conducted to inform Water for Good is publicly available.

DR CRAIK: But if you could just check.

MS GRANT (DFW): Confirm that, yes.

DR CRAIK: That would be really helpful. Thank you.

DR MUNDY: South Australia currently has uniform pricing, I understand.

MR MORTON (DFW): Yes.

DR MUNDY: Is there sensory analysis available about what implicit subsidies are flowing around within the system as a result of that? Obviously it's much cheaper to produce water and supply water in more densely populated areas than others. Has any analysis been done on the extent of that cross-subsidy?

MR MORTON (DFW): To my understanding it hasn't been undertaken.

MS GRANT (DFW): No. The amount of analysis and cost-benefit analysis in urban water - there's a big piece of work for that we need to undertake, and this is what we're trying to work through, and developing a tool for such with the Goyder Institute.

DR MUNDY: Because it obviously becomes a problem if you're going to have the contestable third party access regime; you run into all sorts of odd problems. Is the preference for the postage stamp price in a sense one of administrative convenience, because that means you've only got to set one price, or is it more motivated by government's view about equity?

MR MORTON (DFW): That's a good question. We'll have to get back to you on that in terms of the specific rationale, but I'm assuming it's a bit of both, to be honest.

DR CRAIK: It's probably a historic decision and you'll have trouble finding the origin.

DR MUNDY: Just coming back to the security, most of this inquiry's discussion has been about the supply of water to households. Today has been a bit different, but we haven't heard much about stormwater, the role of flood mitigation, and sewerage, except in the context of it might be a source of water, and you've established essentially a security of supply standard for the supply of water, avoidance, et cetera. Has similar work been done on establishing standards for the reliability of the sewerage network, to do the sewerage network's job, taking stuff away, and similarly with flood mitigation in urban areas? Has a similar piece of work on performance of the system been done?

MS GRANT (DFW): With regard to flood mitigation there has been some work done regarding flood mapping. The flood mitigation aspect is also part of the

stormwater task force that was established by the minister, and I think if you look historically at how we've managed our urban water systems, we've gone from just getting water and waste to people, then we've gone through, "Oh, actually, we've got to manage floods," and then we've now gone to, "Oh, actually, we could use it as a resource," and we are doing some work regarding how our stormwater infrastructure can manage and address the flood mitigation issues that we still have, so that's still a high priority.

DR MUNDY: One other question. Environmental standards: some jurisdictions have ruled out sources of supply, just ruled them out for environmental reasons or whatever. Are there any what we might call policy bans currently in place in South Australia, like "We won't used recycled sewage" or "We won't pipe water from rural areas"?

MR MORTON (DFW): I guess the government's current policy position with regard to stormwater for potable use is that the scientific evidence on public health aspects is not such that they would be confident to allow that to occur, so the current policy position is that stormwater is not fit for potable use, or stormwater capture is not fit for potable use. However, there's a range of scientific assessments that the government is sponsoring to assist to clarify some of those public health issues.

DR CRAIK: What about recycled water? Do they have a view about recycled?

MR MORTON (DFW): I'm not sure what the current policy position is on recycled water but I'm assuming it's the same.

DR CRAIK: Could you find out and check for us, because obviously the Queensland government thinks it's okay and the National Water Commission thinks it's okay.

DR MUNDY: Just on stormwater, is that a per se "We just don't think stormwater is acceptable" or to date someone hasn't come along with a stormwater plan which delivers water at the potable standard like, for example, there is in Orange?

MS GRANT (DFW): Right. We haven't got sufficient study or research to say that it is absolutely fine.

DR MUNDY: So someone hasn't come along and said, "Here's what we're going to do."

MS GRANT (DFW): "Here it is," yes.

DR MUNDY: "Here's the water that's going to pop out the end and therefore it's

potable."

MS GRANT (DFW): Yes.

DR MUNDY: The City of Salisbury scheme is clearly not intended to be potable.

MS GRANT (DFW): No, and so again we've taken advice from our Department of Health on this and they have a very strong view on this. However, as Steve mentioned, we are undertaking further studies on whether it's possible and, also with regard to just the health aspects, obviously the cost-benefit analysis of that as well.

DR MUNDY: Okay. I'll make the observation that I made before: it's curious that all the stormwater running down the streets in Canberra eventually ends up in the Murray.

DR CRAIK: One final question: you've got a list of the government's arrangements for the water sector under Water for Good. The Department of Transport, Energy and Infrastructure I notice has coordination and planning of state infrastructure requirements. How, for instance, does that fit with a new desalination plant? Like, they're obviously not the ones by themselves that say, "We need a new piece of infrastructure which is a desal plant." Does that mean that they're the ones who actually end up commissioning the thing? It's their responsibility to kind of get a bill? I guess my question is: some of these roles appear to give the impression of a bit of overlapping.

MR MORTON (DFW): Yes.

DR CRAIK: How do you decide who actually does what and what's the coordination mechanism?

MR MORTON (DFW): In regard to the infrastructure and the role of the Department of Transport, Energy and Infrastructure, they are responsible for developing, I guess, the infrastructure pipeline which is, you know, the pipeline of necessary infrastructure projects across the state, which includes water. They're also responsible for preparing the South Australian Strategic Infrastructure Plan, and this is prepared in close collaboration and consultation with agencies. So where all infrastructure requirements might be met, might be required, they're likely to be raised by us, as well as other community consultation processes that may occur around those.

DR MUNDY: So is this essentially a management of the capital works program function or is it not wanting to overstress the construction sector problem or - - -

MR MORTON (DFW): Ultimately what's prepared is a pipeline of infrastructure projects. It's an identified need for infrastructure investment and that's set out over a number of years and it's planned in the context of, I guess, issues of need as well as funding availability; some prioritisation across those projects.

DR MUNDY: So it's essentially a document to inform constructors to some extent of what's coming in the pipeline?

MR MORTON (DFW): I think that's one of its functions. The other function is that it serves a purpose in ongoing budget discussions that the government has.

DR CRAIK: Presumably the desalination plant wouldn't have gone into that list until there had been this whole process to decide that that's what you needed.

MS GRANT (DFW): Yes. There was a senior task force that was pulled together for the desalination plant, the most senior public servants in the government, and that really was dealt with very separately.

DR CRAIK: As a sort of coordinated effort.

MS GRANT (DFW): Yes.

DR CRAIK: Is there a coordination mechanism for all these entities and groups and things in the SA government?

MR MORTON (DFW): In regard to the infrastructure specifically?

DR CRAIK: No, in regard to water, government's arrangements for the water sector. Do you all get together every six months or a month or something?

MS GRANT (DFW): With - - -

DR CRAIK: With each other.

MS GRANT (DFW): Yes. With SA Water, we're in the process of developing a memorandum of understanding of how we work together.

DR CRAIK: Okay.

MS GRANT (DFW): That's fairly new. However, there are meetings with the CEs and there's lots of interaction between the agencies on individual projects. But the CEs do meet on a regular basis.

MR MORTON (DFW): The other mechanism as well was the Water Security Council.

MS GRANT (DFW): That's right.

MR MORTON (DFW): Which is chaired by the minister for water.

MS GRANT (DFW): Yes.

MR MORTON (DFW): That includes representation of the core agencies in water resource management, such as PIRSA, Planning, Local Government, us, Environment and Natural Resources and where there is an issue that involves other agencies which are outside the core membership, they will be invited to participate in that discussion.

MS GRANT (DFW): So DPLG, Planning is there. You said Primary Industries as well. The minister chairs that and the water commissioner provides secretariat support for that, too.

DR CRAIK: Thanks very much, Julia and Steve.

MS GRANT (DFW): We don't have the historical knowledge of everything - Water for Good - that you probably were looking for.

DR CRAIK: That's all right. There has been a bit of change, I guess, in water in this state, as in some others - urban water. Thanks very much for the submission and for your answers today, and if you could follow up some of those things we would be most grateful.

MS GRANT (DFW): Yes.

MR MORTON (DFW): Sure.

DR CRAIK: Thank you for coming along. You are one of the few departments who did, let me say. So we're very grateful. Thank you.

DR MUNDY: Thanks very much.

DR CRAIK: Now we have Peter Dillon from CSIRO. Peter, if you could, once you're comfortable, state your name and organisation, and give us a brief rundown. Warren may be more of a speed reader than I am, but I haven't read it yet.

DR DILLON (CSIRO): I'm Peter Dillon from CSIRO Land and Water. The material I've prepared today has just been done so it hasn't been vetted by CSIRO. If CSIRO objects to any of this, then this isn't from CSIRO: it's my personal views. The submission we made - and I apologise; this was very much a last-minute thing but it's something that I've been thinking about for a very long time. I was asked late Friday afternoon whether I was interested in putting a submission together and clearly I was. When I read the first point, "opportunities for efficiency gains" and "structural, institutional and regulatory and other arrangements", I said, "Yes, they are considerable," and so this is a good area for the Productivity Commission to be working in.

I think the urban water sector has been slow to adopt basin water planning approaches, and I think a large part of that is due to the separation of management functions within institutions, including in government, within each jurisdiction. You've got the water supply and sewage, stormwater, groundwater, streams, aquatic ecosystems in and near urban areas, and it's really difficult to get coordination across all of those areas. As an example in this state, we heard a list of those state bodies that are involved in water, and I think Steven listed off about six. Holistic management of the urban water resource is an almost unachievable goal in most jurisdictions due to fragmentation of responsibilities and conflicts of interest among and within agents. Coordination does need strengthening, and that's not just a South Australian issue.

Approvals are required from eight or more organisations in establishing a managed aquifer recharge project and that's a considerable deterrent to proponents of such projects. The processes for selecting water supply augmentation projects deny consideration of externalities in harvesting non-conventional sources, such as stormwater, and I guess that while these are problems, they really reflect some great opportunities for us in the urban water sector.

So, going through into item 2 of the scope of your terms of reference, "What are the options to achieve the efficiency gains?" Looking firstly at economic, social and environmental impacts, if we look firstly at, "What are the sources of water in urban areas?" I've included a diagram in here of sources of water and uses of water in metropolitan areas in Australia. We can see that stormwater represents a very significant resource. It's between 85 per cent and 145 per cent of mains water use in five cities, but in most cities less than 3 per cent of urban stormwater is harvested. Perth is the exception, where about 80 per cent of stormwater is re-used for irrigation via storage in aquifers.

With climate change, run-off from urban areas is going to become an increasing proportion of the surface water available in urban areas. There's been a lot of investment in flood studies but it's very difficult to find data on stormwater quality and capturability, and the environmental impacts of stormwater and stormwater harvesting on coastal water quality, flood mitigation, urban landscape amenity and land value all warrant evaluation, so those options are on the table, comparable with others. So I would recommend that governments invest in acquiring data relevant to all possible uses of stormwater and other urban water sources to enable the application of National Water Quality Management Strategy guidelines to assess the cost and safety of options, including environmental impacts of those options, and to establish baseline criteria for urban environmental objectives.

Moving on to impacts on government business and consumers, under the National Water Initiative a systematic assessment of all options using a bottom-line approach hasn't really been undertaken in urban areas because not all the options have been on the table. The ATSE report makes clear reference to South Australia in that regard. What I'm proposing be done in order to provide a scientific basis for evaluations and for these to be transparent is that there be a single institution in each state. For the purposes of this document I've called it a water bank - and I've got a figure on page 3 to show that - to be adopted to allow updating of projections of demands of water for various uses; canvassing and systematic evaluation of options for future supplies, including water savings; transparent decision-making with representation by government to ensure that the options meet the agreed national objectives expressed through local criteria - these, for example, include the environment requirements - and as a means to bringing private and public sector resources to bear on future water infrastructure investment.

A really important point I think is that the portfolio of urban water infrastructure generates a stable ongoing revenue stream that should be attractive for investors, including superannuation funds, which may alleviate the need for government debt. So I'm talking about diversified supplies of funds for infrastructure as well as diversified supplies of sources of water for urban areas. So a second recommendation is that the Commonwealth, through the Productivity Commission, encourages the formation of institutional arrangements in jurisdictions that allow all options for new water supplies and savings to be transparently assessed against economic, social, environmental and national objectives and supportive local criteria to meet future water needs with an adequate lead time to prove innovative options.

The third recommendation is that the Commonwealth encourage infrastructure investment by superannuation funds or bonds through assisting risk management by appropriate investment in research and development and demonstration projects, and

by spreading revenue on the aggregated diversified supply system. This should provide transitional pathways from returns to state government on past capital investments to a future diversified investor base.

Moving on to the last part about proposed work program implementation plans actions by government - Commonwealth, state and local - there's a series of these. The Commonwealth, through the Productivity Commission, establishes an entitlement system for urban stormwater, taking into account existing investments in water harvesting infrastructure, uses of water, contribution to resilience of water supply systems and means of maximising the value of water, protecting existing interests and freeing up trade in harvested water. Of course, such an entitlement system would be based on understanding the flows available and the environmental flow requirements, and the rest becomes the consumptive pool which can then be allocated, just as applies in rural areas.

The Commonwealth also establishes rules of engagement in recycling of water from sewage to ensure that commitments to supply downstream uses of recycled water are bounded and renegotiable to future higher-valued uses of this water, either upstream or downstream of the sewage treatment plant. Recommendation 6 was for stormwater and sewage recycling; that the principle be adopted that the highest-valued uses are supported and that substitutional use should have priority over new uses in order to improve the resilience of the water supply system. We have seen a number of projects that have been established on the basis of creating new demands for water which just create increased pressure in future drought.

I guess it's a bit ironical that desalination - as the rainfall-independent supply and is seen as the insurance for water supplies - is most efficient when operated continuously. But now that we have our first year of desalination plants under way, attention should turn to augmenting storages in wet years to secure potable water for dry years. This can be achieved through stormwater harvesting and water recycling from sewage via aquifers and reservoirs.

One of the things we've seen in Colin Pitman's presentation this morning was local government getting involved in water recycling, getting a commercial return out of it. It's not the only reason they do it but they do get a commercial return. That commercial return is optimised by recovering the water as soon as possible after storage so that you can realise the revenue return. So we're occupying the storage capacities that we have with water that's being pulled in and out and we're denying the use of those storages for long-term storage to deal with a drought condition. So there isn't currently an incentive for investment by the private sector in long-term supply. It's really seen as a government role. Government has been looking at its role in water resources management as being purely demand management, and not looking at making investments in new water supplies. I'm only thinking of the post

1970s period. Pre that, there was a lot of dam building going on.

I guess there is an opportunity there for government to consider investment or incentive for private investment in increasing storage for drought and emergency supplies, particularly but not exclusively in aquifers, so that not all storage space is occupied by water for short-term storage. In urban and rural areas, the role of government in water resources management should be extended beyond demand management alone to improve the resilience of supplies where possible through conjunctive management of surface and groundwater resources.

Priority areas where greatest efficiency gains are evident: I've been focusing this talk on stormwater and recycling because they're the effectively untapped or relatively untapped resources. As I said, less than 3 per cent of stormwater nationally, apart from Perth, and less than 15 per cent of effluent is currently being re-used and the sum of those two alone would more than meet mains water supplies without needing to draw on resources - without needing to take water from rural sources.

So demonstration projects are really required to gain confidence in design, operation and management of these systems to allow acquisition of data to enable proof of effectiveness and reliability of such projects and to allow training of operators and regulators of other projects. I think that's an area where continued Commonwealth investment has been taking place through the National Water Commission in innovative projects, and that's something that has been really valuable and should be continued.

Indicators for efficiency gains: probably a primary indicator might be that net demand on rural catchments outside the committed government-owned water supply reserves should not increase and I reflect back on the decision that was made, not so long ago, that Adelaide and Melbourne would have priority over water in the Murray-Darling system - and these cities are net water exporting urban areas - at the cost of denying rural livelihoods. A transitional pathway could be to accept that that was needed as an emergency measure and work to eliminate the emergency by improving the storage and use of water generated in cities, such as stormwater and sewage, so that the take from rural systems is not increased.

There's a set of others measures down there, none of which will be a surprise to you. Is there much in there that's unique? I reinforce the point about lead times for future expansions of water supplies increase to allow innovative, more efficient solutions to be trialled and verified before commitment, especially when you're talking about drinking water supplies and infrastructure investments of the 50 to 100-year lifetime. Those sorts of decisions don't need to be made on three years' notice, as we have been seeing, and I guess the whole country queuing up for buying

desalination plants at the same time hasn't done very much to help keep the price down.

Essentially, some of the reforms that have taken place in the rural sector have not yet taken place in the urban sector and it's largely, I think, the fragmentation of the urban sector that's been the key issue. The proposal about forming a water bank or an integrated unit that brings in the resources needed to do the job without relying on a minister looking at his budget and saying that we can't do it, looking at the potential to tap into the private sector resources and superannuation funds in particular - the citizens, in fact the residents of the town that are getting the supply of the water - could be a way forward.

DR CRAIK: Okay, Peter, thanks very much, and sorry you had to spend your weekend doing this. But thanks very much for sending it in to us and we won't put it up on the web site until we get the final proofed one. If subsequently it turns out that something that you have said here your superiors don't agree with and you don't wish to have us formally pick up, I guess we'll take that into account too. I have a couple of questions and Warren has too, but we won't have long because we'll probably run out of a time a bit. We have to move on to Perth.

You talk about this water bank as a way of trying to overcome what you see as the fragmentation in relation to urban water supplies. Would it be correct that the Economic Regulation Authority, the ERA, in Western Australia has proposed something called an independent procurement entity, which sounds - and I just want to check if it's the same thing as what you're talking about in the water bank. Now, the IPE that they're proposing essentially does the supply-demand, is an independent entity that keeps records of supply and demand of the system that they're looking after - the entity they're looking after - and they make decisions about, "Yes, it looks like we're going to need a new water supply source for this area," and calls for expressions of interest from everybody, including the private sector - no limits on what those entities might be - and then either decides, itself, or makes a recommendation to a government, and does all the analysis of alternatives and costs and benefits and things and then makes a recommendation to the government about how to go ahead in relation to a new water supply. Is that what your water bank does?

DR DILLON (CSIRO): Yes, it is. It's aiming to do that but also taking into account, quite explicitly, the environmental issues that are raised. When you look at economies of scope of projects - as an example of that, the stormwater harvesting that Colin was talking about where it was primarily done initially for flood relief but also, "Ah yes, there's another benefit," and then when you start to look at them both together - if you were looking at the supply alone you would probably not run with it but looking at supply and flood mitigation together, it becomes a highly attractive

project. When you're looking at it with the glasses of the water utility or the supplier of water, those are the features that tend to get ignored, so it needs a broad vision on the whole of the water system in order to make good decisions that are going to have a bearing on a range of government policies, including coastal water quality, including urban amenity and heat island effects and all the rest of it.

DR CRAIK: My next question is, an IPE or a water bank maybe works pretty well in an urban area. How do you see it in regional areas? Do you have a view about regional urban areas - you know, small regional urban areas?

DR DILLON (CSIRO): Yes, but I think dividing the country up until small chunks is not a helpful thing. The more we can look at broader regions, the more chance we've got of making useful decisions that are more reflective of basin management, whether it's a groundwater basin or a surface water one.

DR CRAIK: So would you do it on a catchment basis, a basin basis, or are you talking about a state basis?

DR DILLON (CSIRO): In this case, with the Australian jurisdictions, it's probably easier to do it on a state basis rather than to subdivide too much because the level of expertise that's required, once you've assembled it you might as well use it in each of the regions. It could be a national thing, but I can't imagine that achieving much acceptance in the state jurisdictions.

DR CRAIK: So essentially a water bank for each state?

DR DILLON (CSIRO): Yes.

DR CRAIK: It would sort of be a sensible scale.

DR DILLON (CSIRO): Yes. You can cycle through projects and the learnings you gain from working in one area you can apply in another.

DR CRAIK: Okay.

DR MUNDY: In recommendation 4 you suggest that the Commonwealth should establish an entitlement system for urban stormwater. Putting aside the constitutional question, which I think might be problematic, who would you see as the natural home of these water entitlements?

DR DILLON (CSIRO): In South Australia it would be Department for Water because I assume they're the ones that are looking after the entitlement for the rural - - -

DR MUNDY: So you wouldn't see the entitlement resting with the local authority on which the water falls?

DR DILLON (CSIRO): No. I think you have to deal with it as a whole catchment, not as a subdivision of local government areas.

DR MUNDY: Okay.

DR DILLON (CSIRO): That's really just putting into effect - one of my main concerns - going back from the days of the land and water audit, basically the urban areas were annexed off and the Australian land and water audit was done on the rural domain because that was under the province of the Department of Primary Industries, who was responsible for that area. Ever since, there are still remnants of that that are carrying on, where you don't see implementation of policies that have been effective or would be effective, if given a chance, in rural areas into urban areas.

I recognise there are some more complications because a lot of the flows in urban areas are very peaky: you don't get long tails on the recession hydrographs as you do, say, the floods that are occurring the Murrumbidgee now. You know, you can make some forecasts about what will flow past Murray Bridge in the next few months. But in an urban area, you've got minutes or hours, so the procedure for going through harvesting, if you're allocating harvesting to different entities, is quite problematic.

So one of the things we've proposed, in looking at even the way that groundwater is allocated - you know, managed aquifer recharge facilities are allocated - is that you have one operator responsible for a given area. The competition comes in that, just like the servicing of Adelaide's water supply, you can have multiple companies wishing to be the operator for the ASR schemes in that area; but at least when they're operating them, they're not competing with each other for the way in which they're harvesting the water, in which they're recovering the water, so that you get the full benefits of an integrated operation.

And maybe different parts of the city that are not interacting with each other - because they're in separate surface water catchments and perhaps the groundwater is in separate groundwater basins - could be allocated to different operators. But I think having individual sites run by different operators of ASR schemes is likely to lead to problems in the future and I think we need to be in front of this as these schemes are set up, to set up the right framework.

DR CRAIK: Okay. Just one final question, Peter. Your comments about rural-urban trade and water from the Murray to provide water for Adelaide and

Melbourne: if the water from rural-urban trade is less expensive than other recycled stormwater or some other desalinated water, should you not use it? Is that not the most economically efficient way to use it, particularly if it's willing sellers selling their entitlements?

DR DILLON (CSIRO): I understand market forces and that's appropriate, but I guess urban areas are used to paying 10 times more for water than rural areas. Rural areas often can't afford to do the sorts of water recycling that can take place in urban areas. I would say yes to your question; you would allow transfer in those cases. But what I'm also seeing is that we've got urban areas currently investing $3.00, $3.07 to $3.50 a kilolitre for desalinated sea water. They've got the opportunity to get another 100 gigalitres or 60 gigalitres or so at about $1.12 a kilolitre. It's certainly within the willingness-to-pay envelope of urban areas.

That might be more expensive than buying water from the river, but when you look at the - so long as you take into account the flow-on effects, the impacts of the economy of the production that's been forgone, the retailers and the downstream processors of that produce - if that's taken into account in that decision-making, I quite agree with you. But very often it's just the price of the water and I guess that can be a suboptimal decision if you're not dealing with the flow-on effects.

DR CRAIK: Okay. Thank you. Thanks very much, Peter, for putting in a submission and coming along today. We appreciate that very much.

DR DILLON (CSIRO): Thank you.

DR CRAIK: To all who are in the room, that concludes today's scheduled proceedings. There doesn't appear to be anyone who wants to appear before the commission, so I adjourn these proceedings and we'll resume in Perth tomorrow on 8 December. Thank you.

AT 12.40 PM THE INQUIRY WAS ADJOURNED UNTIL
WEDNESDAY, 8 DECEMBER 2010