REPORT ON PROCEEDINGS BEFORE

STANDING COMMITTEE ON NATURAL RESOURCE MANAGEMENT (CLIMATE CHANGE)

At Sydney on Monday 10 May 2010

The Committee met at 2.00 p.m.

PRESENT

Mr M.. J. Brown (Chair)

Mr G. F. Martin

Mr J. D. Williams

Mr R. C. Williams

Transcript provided by Pacific Solutions

DAVID HARRISS, Commissioner, New South Wales Office of Water, Department of Environment and Climate Change and Water, Level 2, 227 Elizabeth Street, Sydney, affirmed and examined:

CHAIR: Commissioner, thank you for coming here and appearing before us today. I am advised that you've been issued with a copy of our terms of reference and a copy of the standing orders that relate to the examination of witnesses; is that correct?

Mr HARRISS: Certainly.

CHAIR: I know you are aware that your evidence is given under Parliamentary privilege and you are generally protected from legal or administrative action that might otherwise result in relation to the information provided. Commissioner, would you like to make a brief opening statement?

Mr HARRISS: Certainly. Thank you very much Chair. Thank you for the opportunity to participate in the inquiry. I will probably go through very briefly, some of our initiatives and outline some of our investment in resources that develop policies and implement policies that are affecting water management, which is going to be severely impacted by climate change, as it is now also by climate variability.

We certainly believe that climate change and increased climate variability are very real issues for New South Wales. On current trends, average temperatures have been increasing at an accelerating rate since the mid nineties. Generally, we expect New South Wales to become hotter with an increase in maximum and minimum temperatures in all seasons and we are planning accordingly.

Extreme weather events are predicted to become more frequent, with increasing floods, more variable episodic events, particularly in the coastal areas, but we are very, very aware that the impacts will not be uniform and we have to have systems in place which account for variability.

It is currently predicted that until 2050 North East New South Wales is likely to experience a slight increase in rainfall, while the southern area of New South Wales is likely to see a significant decrease in winter rainfall.

That will have a significant impact on run off and it is the run off that flows into our water storages and into our rivers, which becomes available for extraction for commercial purposes and also is essential for the health and productivity of our river systems for the natural as well as commercial values.

The greatest changes in water availability are predicted to impact on the Murray Darling Basin. We are predicting to see about an 11 per cent decline in water yields by 2030, this is based on information provided by CSIRO; substantially about nine per cent in the north, albeit the science behind that is less sound than in the south, where we are expecting to see about a 13 per cent reduction in water yields by 2030.

In dry years it will be significantly greater than long term average, of course. We are expecting to see about 10 per cent reduction in most of New South Wales but around 20 per cent in the Murray and Murrumbidgee Valleys in particularly dry years and estimates that under extremely dry scenarios we might see a reduction in water availability in any particular year by about 70 per cent.

Given the concern about climate change, we have become involved in a large number of programs, which are development and implementation of those programs. A couple of those include - and this will not be absolutely comprehensive, because we are involved in a wide number - but the Murray Darling Basin South Eastern Australian Climate Initiative, we have invested best practice management guidelines for local water utilities and they all include assessment of secure yielded water supply under predicted climate change scenarios.

We have got a metropolitan water plan, second iteration which will be released later in this year, which ensures Sydney's water needs are met in the face of climate change, climate variability and population growth.

We have got management practices for sharing the water in rural environments. We are also involved in a substantial amount of research and studies - and I will not go through all of those, but they are based on regional, local and broader levels.

How we manage water; there are a number of organisations in New South Wales Government, which looks after climate change or has interest in climate change. The Office of Water, which is part of the Department of Environment and Climate Change and Water, we are the lead agency for sustainable water management. So most of my comments today will be about what we are in fact doing within the Office of Water.

Our role is actually to share water and the available water resources of New South Wales equitably between towns and cities, the environment, irrigation, stock and domestic needs, and industry.

I suppose typically we have talked about a triple bottom line of social, economic and environmental outcomes, but I think to that you can also add more cultural outcomes and some spiritual outcomes as well are coming into play with the request to share water between competing applications.

The major tool that we have for applying this is the Water Management Act 2000. It outlines the principles by which water sharing plans are developed which protect our water resources, the habitat and then actively allow us to allocate water for consumptive purposes.

One of the key components of the Water Management Act is the preparation of water sharing plans, which the Act itself was the first legislation in Australia to actively acknowledge that water is required for the environment. We have developed water sharing plans which look at protecting the environment and the fundamental health of the environment, but then provide the rules for allocating water between industries and commercial uses, and also provide the rules that allow for water trade; so that we can meet our requirements under the national water initiative to allow water trade to enable water to move to its highest value use, subject to operational and physical constraints.

We have currently got about 45 water sharing plans which cover about 90 per cent of all the water extracted in New South Wales and it is expected that the remaining about 35 water sharing plans, 10 per cent, will be completed by the end of 2012.

The development of water sharing plans is a transparent process and we have extensive stakeholder engagement, as opposed to other plans which are being developed in other jurisdictions so we are quite proud of them.

By the way, the plans are underpinned by an enormous amount of information. The Office of Water currently manages the biggest hydrometric network in Australia, which includes about 1500 monitoring sites and we are at the leading edge in water modelling.

We have about 900 surface water gauging stations which are polled every day and even more so during flood events when we might have to work out what the heights are on a 15 minute basis, which we provide that information to the Bureau of Meteorology and to the SES to make emergency management services as well.

But most importantly through all of this, and we have been managing through the most extensive drought in New South Wales history, no town in New South Wales has run out of water.

Rural water management, we have got the water sharing plans. A major component of those water sharing plans is called the Available Water Determination, where we will allocate a proportion of a person's entitlement or a user's entitlement based on water availability at a particular time. That might be very variable.

In New South Wales we have licensed entitlements and effectively they are divided into two types of entitlements. This is where we differ very significantly from other jurisdictions. We have a high security entitlement, which has typically been allocated for town water supplies, industry requirements, stock and domestic requirements, permanent plantings, whereby they need to

have water every year, otherwise trees will die or there will be significant economic impacts. They constitute about 10 to 15 per cent of our total water entitlements.

Then we have a general security entitlement, which is more opportunistic. Effectively in dry years people would with general security entitlements will not get much water; in wet years they will get plenty of water. So New South Wales looks after its high needs industry and has a more opportunistic allocation of water whereby people get water for use in wet years and that is, quite frankly, very good policy. More water is used in wet years; less water is used in dry years.

We make those available water determinations regularly during a water season. It is very market sensitive and we are very aware of the impact of that market sensitivity. Particularly in the southern valleys, we will make announcements at the same time on the same day in every month and we have convinced the other jurisdictions that they should do the same, because we now have 24 hour online water trading markets.

We have also introduced the initiative in New South Wales of carry over, so if you do not use the water available in one year, then you can reserve it for use in the following year. If you have a substantial dry period the following year you have got some water. You can actually mix and match water availability for your own business.

It is used as an insurance policy so that it just does not continue to add up. For example, if you carry over say 50 per cent of your unused entitlement, then the following year we have an allocation announcement of 60, you will lose 10 per cent of your allocation. You cannot carry over or sell any more than 100 per cent of your entitlement in any particular year. This has proved very popular in recent years as a method of managing your allocations in limited water availability.

Finally, we have established in the southern valleys during this drought in particular, critical water advisory groups. They have included water users, local government and industry advisors who have been set up to advise the Office of Water and the Minister on issues relating to the distribution of the available water in severe water shortages.

I would point out categorically that those critical water advisory groups do not make management decisions, they provide advice only. It is the role of the government and the New South Wales Office of Water by delegation to make those decisions about the application and distribution of water.

Those groups have provided invaluable information to the government during the current drought over the last few years and whilst there has always been criticism from a lot of sectors because we are sharing a very limited resource, they have all operated extremely well and provided invaluable advice to the government.

Thank you Chair, with that I will answer any questions that you might have.

Mr JOHN WILLIAMS: Obviously my concerns probably relate to a comment, if you are in a position to make it, within the scope of this report, regarding a future for irrigation within some of the planning proposals that you have for the future, accounting for climate change and to add to that is there a methodology that could achieve a better outcome for irrigators to get better use of their current water allocation.

Mr HARRISS: Our water sharing plan process puts in statutory water sharing plans for a 10 year period, after which they will have to be remade and we will factor in a whole lot of the new science that has been developed over that period of time.

Up until recently, until the signing of the inter-governmental agreement on Murray Darling Basin reform, we had what was called risk assignment model, whereby at the end of that 10 year period when we changed the water sharing plans, we could potentially reduce the volume of water available for all consumptive users across effectively the area of a water sharing plan whereby the users could absorb effectively a three per cent reduction in water availability. Then anything thereafter, over and above that three per cent, would be compensable by governments.

We believed in New South Wales that the 10 year statutory planning process and the risk assignment model of that three per cent, provided for technology developments and provided for communities and industries to adapt.

Since, however, we are now faced with the basin plan which is currently being developed by the Commonwealth Government and unfortunately whilst we know what the contents of the plan

will be and the issues to be addressed, we have no indication of the level of the volumes of water that will be required for their environmental assets, nor have we got any indication of the reduction in the sustainable diversion limits which will be determined by the government.

I understand that the draft basin plan will come out in July of this year and then in New South Wales, particularly the Office of Water, will be responsible for putting in our next iteration of water sharing plans to be compliant with that basin plan. We will have to comply with the reductions in water availability that is determined by the Commonwealth Government.

Mr JOHN WILLIAMS: Just supplementary to that, does that tie in with your 10 year plan? Does the timing fit within that plan?

Mr HARRISS: Yes, most of our plans for the Murray Darling Basin within New South Wales have been completed and they certainly will be completed by 2012. The basin plan will be implemented within New South Wales in 2014 because we have to make our next iteration of plans compliant with that basin plan. By comparison, Victoria I understand, its next iteration of plans will be in 2019.

Mr RAY WILLIAMS: I notice in your submission that you have, especially under the Metropolitan Water Plan, made extensive mention of Warragamba Dam and the flows in the Hawkesbury Nepean River itself. I just want to ask you, I originally believed that the criteria for enacting the desalination plant was if the water fell below 70 per cent in Warragamba Dam; is there a criteria at the moment where the level of the dam in Warragamba is not to exceed 70 per cent?

Mr HARRISS: No, absolutely not.

Mr RAY WILLIAMS: That is not correct?

Mr HARRISS: No. I am certainly unaware of anything of that nature. I will take it on notice and go and check but I have not heard of any restrictions to that at all.

Mr RAY WILLIAMS: I just wanted to ask a few questions in relation to that, given that this is our greatest water storage obviously for the city metropolitan area. I guess water management and particularly in the low lying areas of the Hawkesbury Nepean area are greatly affected by flood, although we have not had one for the last 18 years, I just want to ask did you think it was wise that the opportunity to raise Warragamba Dam back in 1995, which was, I believe, rejected by the Carr Government at that time, the dam was not raised and not strengthened, which would have given us temporary capacity in light of where we are now some 15 years later, whether or not that would not have been a good option for water storage and obviously for better flows to the Hawkesbury and Nepean area?

Mr HARRISS: I am not aware of the suggestion that Warragamba Dam be raised. That was prior to my time as Commissioner, but I think generally speaking you look at the yield that you can get from dams, the substantial investment that is required generates very limited yield in many areas. We get asked numerous times right around New South Wales as we have gone through this drought: Why don't we increase the capacity of the dams we have now or in fact build new dams? I think one of the ways l like to look at it is in most of New South Wales - you mentioned there has not been a flood in the Hawkesbury Nepean for 18 years - similarly there has not been a flood where any of our dams have actually over-topped if you like, since 2000.

That would mean that any investment in another dam would effectively be wasted because all of the water that has fallen has been captured by the existing infrastructure. Any additional infrastructure, which is quite substantial in cost, would not have provided any additional storage capacity during that period of 10 years.

What we are also finding is that the floods themselves have an enormous environmental benefit as well. It is a fine balance between increasing your yield, increasing your storage and allowing floods to pass downstream as well.

Mr RAY WILLIAMS: If I might draw on that answer of what you said in relation to the drought that we have sustained, especially over the last decade, isn't that all the more reason that we should put in place dams for the future? If I look at the rainfall, if we go back over, especially back to the beginning of the early 1900s, we actually had less rainfall in the early periods of the 1900s which I guess if the same philosophy had been put in place we never would have built Warragamba Dam in the first place and we would have just relied on whatever water storage capacity we had.

Given that we are now faced with an increase of many millions of people in the Sydney basin, how big do you see the desalination and these types of techniques in relation to accessing and the storage of water that we currently have? Is it going to suffice for the increase of population that has been proposed by the current Prime Minister?

Mr HARRISS: I think so. We've gone through a fair bit of research as we have developed the 2010 draft Metropolitan Water Plan, so there has been an enormous amount of modelling that has been undertaken to look at what the population increases are likely to be; looking at the climate variabilities and looking at the security of water supply.

I think New South Wales are probably well ahead of the other jurisdictions in terms of we have, for Sydney, a mixture of dam capacity, where we have actually allowed access to the deep storage in Warragamba Dam and Nepean Dam. We have also looked at the desal opportunity, which I think has the ability to double in its capacity should we go into a further drought period. We have got recycling initiatives which are amongst Australia's best and we have got an efficiency policy. Over and above that we have got the diversion of water from the Shoalhaven River, a potential for that coming into the Sydney catchment as well. We have got as emergency backup, the potential for groundwater use at Leonay, Wallacia and Kangaloon.

I think Sydney is extremely well placed by comparison to any other city in the same kind of climate than anywhere else. I think we should be reasonably proud of ourselves that we are so well advanced, but we do that by having a mixture of water supply in terms of desal and in terms of dams. I just do not think the dams are the answer. I think you will find, as I mentioned before, that an increase in dams does not necessarily provide much of a benefit because, as I said, if you have not had a flood where the dam has overtopped in 18 years, then the capacity you have got there has been enough to absorb all of the inflow so far.

Mr RAY WILLIAMS: I was going to ask you in relation to the desal plant, exactly what percentage of Sydney homes will the desal plant actually provide for? I have heard five per cent up to 15 per cent of Sydney metropolitan homes.

Mr HARRISS: I don't know the proportion of how many Sydney homes. I know it has a design capacity up to 15 per cent of the demand, which could be doubled to 30 per cent by doubling the capacity of the desal plant. But that is the sort of question that could be asked of Sydney Water rather than the Office of Water.

Mr MARTIN: Given the last 10 years, the drought and the water restrictions that have been involved in a lot of places, including Sydney, in terms of demand management, do you think that is going to have a longer term impact on people's culture with water, thinking that it is not something that is there free to be used, do you think we are going to get any long term benefit out of the fact that people will be more serious about the use of water?

Mr HARRISS: I think we have seen that already. In many, many areas there is a reduction in water use and it is more voluntary than it is enforced. That is why New South Wales is now going to water wise rules rather than a strict level of restriction. It is quite ironic that in some of the country areas when we have commenced water restrictions, we find the use actually increases. People think: Hang on, I can only water between six and eight o'clock this morning, I better get out of bed and water, whereas previously they would not have.

What we have found as the drought has gone on and on, with more and more people it is just becoming second nature now to conserve water. I think in Sydney, albeit that the population has increased substantially, we are effectively using the same total volumes of water now as we were using in the 70s.

Mr MARTIN: In the whole of government submission to this Committee it is stated that 'reasonable use' guidelines currently being prepared for water taken by rural landholders under basic landholder rights, when are these guidelines likely to be finalised and who has actually been involved in developing and working up these guidelines?

Mr HARRISS: It is the Office of Water has been the lead agency in developing the guidelines. We have taken it to all the other agencies. We want to go out to broader stakeholder engagements in the coming months. It is interesting, basic landholder rights are a feature of common law. If you live next to a river you can pump - for non-commercial purposes and there are no real restrictions on how much you pump and effectively that was suggesting you could pump with a two inch pump and go hammer and tongs 365 days a year. Whilst very few people do that or

even consider doing it, we believe that my introducing these reasonable use guidelines that it is putting an envelope around what the use could possibly be.

CHAIR: You are probably aware of the water sharing plans that have been suspended over the last four to six years.

Mr HARRISS: Yes.

CHAIR: Could you explain a little bit as to under what circumstances those plans are suspended and are there any moves to develop water sharing plans so they are not suspended?

Mr HARRISS: Basically when we develop a water sharing plan, as I said, we have got over 100 years of history in most river valleys and what we have looked at is the inflow sequence and we have based our planning on the previously worst inflow sequence.

If I can use, for example, the Murray Valley; it is not just New South Wales, but Victoria, South Australia and the Murray Darling Basin Authority themselves, their planning uses the previous lowest natural inflows and what could previously have been put into the Murray or respectively the Murrumbidgee Valleys by Snowy Hydro.

Unfortunately in 2006 the natural inflows were worse than the previous natural inflows by 40 per cent. So that meant that our planning horizon and this was the same for a lot of areas, was well below what we believe was a very conservative planning base in the first instance.

We then went back and consistent with the Water Management Act, where we believed there was a severe water shortage, and that was where we could not guarantee supply under current arrangements for urban use, town water supply in particular, we would suspend those plans and make alternative arrangements consistent with the Act and the priorities for supply under the Act.

Effectively our planning base, which was the lowest inflow sequence previously in 100 years of history, when that was beaten by about 40 per cent, then we were left with nowhere to go really, except we had to suspend those plans and then distribute water consistent with the Act.

CHAIR: What about in the future?

Mr HARRISS: In the future our new planning horizon, our new planning framework will be the new lows and so it is getting progressively less. Honestly, in inland New South Wales it cannot go much lower, particularly in the Lachlan Valleys and the Southern Valleys in particular.

Our level of risk, if you like, we have virtually hit it. Unless you are going to devastate industries and assume there are going to be no flows, you do not adopt a sort of Sahara circumstance, you go on what is the worst inflow sequence you have got in the last 110 years and that is pretty conservative. That will be our new planning base.

CHAIR: Thank you so much for your time. If we have got any further questions we can forward them on to you?

Mr HARRISS: Certainly, by all means.

(The witness withdrew)

IAN COHEN, MLC Greens, examined:

CHAIR: Thank you for appearing before us today. I am advised that you have been issued with a copy of the Committee's terms of reference and the relevant standing orders of the Legislative Assembly. Is that correct?

Mr COHEN: That is correct Chairman.

CHAIR: I do not think it is necessary to swear you in, you being a member of this Parliament. I also would understand that you are aware of Parliamentary privilege and all that flows from that.

Mr COHEN: Indeed, yes.

CHAIR: Would you like to make a brief opening statement?

Mr COHEN: I would, Mr Chairman and I thank you for providing me with the opportunity to appear before the Committee today.

As you would be aware, the content of my submission focuses on terms of reference B primarily, approaches to the management of water resources by all water users, including provision for environmental flows.

My general approach to this term of reference is one that focuses on the practical planning at processes for allocating water, especially in a climate change context where we have extreme variation in resource availability. There will be obvious winners and losers under climate change. We need a management and planning approach that can be consistently applied to tightening resource scarcity through to times of resource abundance delivered by floods.

If our planning approach does not have a level of resilience and an ability to withstand manipulation in circumstances of dire drought, then it would be equally inequitable under circumstances of water abundance. What the Committee should consider, in my opinion, is whether the governance approach currently in the Water Management Act can achieve equitable and fair water allocation consistent with the prioritisation set out in the Act in all circumstances.

It is my opinion that we need to improve the Water Management Act to ensure decision making on water allocation is transparent and encourages community participation and consultation.

A vast proportion of my submission draws upon my office's research on the water management of the Lachlan River. In June 2009 many downstream communities on the Lachlan, particularly from Lake Cargelligo, contacted me about water management on the Lachlan River. What became immediately apparent is the maze through which one has to wade in order to identify management decisions. By and large drought affected communities are left in the dark about water allocation decision making. The result is that communities develop a sense of angst and distrust about water management. In some cases there, understandably, is a sense of mistrust.

In relation to the situation on the Lachlan in the second half of 2009, I think the communities were justified in their mistrust and anger at how allocation decisions were made. The management of the Lachlan River in the second half of 2009 provides a good case study on how water management works in a situation of dire shortage and scarcity.

In a nutshell, the minutes of the Lachlan River Critical Water Advisory Committee and the water trading data demonstrate that some water users were given preferential treatment inconsistent with the priorities of critical human needs and environmental flows.

Instead of putting communities first, then environmental flows, the Advisory Committee focused on giving high security users a 10 per cent share allocation and Jemalong Irrigation Corporation 1000 megalitres upstream only, conveyance allowance, so that high security licence holders could trade water at premium to Barrick Gold.

Only five months into the water trading year 2009/10 Barrick Gold has used approximately 17 per cent of the 2.6 gigalitres allocated to high security water access licences in 2009/10.

The representation of Barrick Gold and Jemalong Irrigation on the Critical Advisory Committee further created the perception in the community that they are witnessing an

inappropriate manipulation of the water trading market, especially when there was no representative from lower Lachlan water users.

It is the equivalent of allowing an employee of the Australian Consumer and Competition Commission to invest in a company they are investigating. In some ways I believe, and obviously it is up to the Committee, it is not different from insider trading.

The material presented in the submission demonstrates that we do need to reform our water management committees and bring them into the 21st century in terms of governance, accountability and transparency.

Indeed, a clear need for consistent principles and procedures relating to water management, the current legislative and planning framework are flawed and has led to a situation where the way in which water is managed in New South Wales is unsustainable and inequitable.

I would like to just briefly give an overview of the key points in my submission, then I would be happy to answer questions.

Regarding the water sharing plans, water sharing plans and the role of the Critical Water Advisory Committees are at the core of water management in New South Wales. Most water sharing plans do not include consideration of the connection between groundwater and surface water systems. By not ensuring that these two sources of water are managed in an integrated way, real threats to our water security will be perpetrated as natural recharge processes are impacted. Increased impacts from salinity will be experienced as groundwater is increasingly extracted to meet critical needs - a poor outcome not only for our environment, also for farmers, business owners and the wider community.

A lack of data on groundwater systems must not be used as a reason for allowing unrestricted drainage of aquifers. It is imperative that the government commit to researching this issue in greater detail.

Regarding the Critical Water Advisory Committees, they currently include members from different classes of water users, department representatives and industry stakeholders. They play a crucial role in examining data on water availability and recommending courses of action consistent with the Act. However, the lack of Aboriginal, local community and non-governmental environmental representation on these committees is concerning.

How can we hope to ensure that the needs of all water users in the State are met if the peak body that advises the Minister on how water should be used does not hear these voices?

There are further concerns with the way in which the committees are run, the lack of procedures to manage conflicts of interest between those involved in making decisions about water allocation and their involvement in the trading of water is unacceptable.

Decisions about water allocation must be based on impartial assessment of scientific data so that the recommendations are being made to the Minister and in the best interests of the environment and water users.

Committee membership should not be provided to those that have significant pecuniary interests in licence holdings or those that are involved in a high level of water trading activity.

Compounding this are the deficiencies in the transparency and accountability of the committees. At the present time minutes and recommendations arising from committee meetings are not being published on the New South Wales Office of Water website. This veil of secrecy does nothing to allay the community fears that the decisions that are being made are not justified or supported by scientific evidence.

The shoddy decision making process encountered in Lachlan highlights the need for the proceedings of committees to be publicly available so that committee members can be held accountable by those whose lives are so dramatically impacted upon by the decisions.

As climate change increasingly drives the need for difficult decisions to be made, increasing community trust and involvement in the decision making process is vital.

The relationship between river flow levels, particularly the capacity of flow levels to dilute saline waters, for example, and authorisation of pollution discharge is obvious. However, there is

no real integration of water access licences at a catchment level with environmental protection licences under protection of the Environment Operations Act.

For example, pollutant discharge rates in an environmental protection licence are not amended or reviewed to be consistent with flow rates of a particular river. A good example would be Delta Electricity whose environmental protection licence had its five year review separate to the five year review of its water access licence, which is currently underway. Currently there is no requirement for consideration of the relationship between allowing increased water allocation under water access licences, which are regulated by the Water and Management Act and subsequent impact on the dispersal of pollutants that are legally discharged under environmental protection licences.

There are many approaches and tools to manage this issue and better integrate pollution discharge levels with changing river flow rates. The Hunter River Salinity Trading Scheme has been one approach. However, we could introduce other approaches whereby pollution limits are linked to flow rates and cumulative pollution impacts.

These two licensing arrangements must be better integrated if we are to have any hope to harmonise the management of water on an individual and catchment basis.

Given the fact that a number of water sharing plans are currently suspended, the provision of section 60(3) of the Water Management Act becomes even more pivotal in the management of water. This section clearly specifies a hierarchy and prioritisation process during times when water sharing plans are suspended. However, the experience in the Lachlan provides a cautionary tale about the ways in which these provisions are being subverted to further the financial gains of certain parties.

How is it that the Critical Water Advisory Committee for this area water able to allocate water to farmers on the basis of critical need for the farmers, to then trade the water allocation at great financial gain rather than using it for the purported purpose of permanent plantings?

Some may say it is totally within a water holder's rights to allow their permanent plantings to die on the vine and sell the water to another user. This is the imperative of the market system. Water is assigned to the most economic use. However, this may subvert other policy considerations relating to food security and eco-system management.

The hierarchy and prioritisation process is open to abuse and policy decisions have not necessarily been reflected in the final use of the water. Provisions currently exist for the Minister to disallow trading but we have not yet seen the use of these regulatory powers.

I would urge, Mr Chair, the Committee to consider other areas of government administration and types of checks and balances that are in place to secure integrity in decision making processes. We equally need to modernise our decision making processes that lay behind water management for New South Wales.

Mr JOHN WILLIAMS: You have made some assumptions about groundwater usage and the fact that it is your belief that there is not enough science provided for the decisions that are made in regards to groundwater allocations.

I draw your attention within the Southern Riverina area in particular, there has been considerable reduction in entitlement to groundwater based on science that has been provided by this government. What other forms of benchmarks do you believe that should be encouraged? I would have thought that the science had been done.

Mr COHEN: I could get you details from my point of view on that in terms of specific issues but the communications I get in general is, particularly in times of drought, that we are seeing massive problems with groundwater extraction and the very fact that it is not combined with surface water extraction necessarily in the assessments, creates a situation where there may well be overuse and that then ties in with other issues, as I have said, regarding salinity. I do not have the science at my fingertips right now, but I will take that on notice if I could.

Mr JOHN WILLIAMS: I think the statement is fairly broad brushed because I see the other side of it, where people are seeing a significant reduction in groundwater extractions, particularly the Lachlan Valley area, where there has been a major reduction in the entitlements available to people in that area.

Mr COHEN: That may be the case, but that does not in itself logically say that it resolves the problems. There is obviously reduction and there needs to be reduction but it does not necessarily mean that the allocation is going in a direction that is of major community benefit.

Secondly, I think yes, it has been a massive time of drought and of course reductions are something that has to occur, but the argument I have is between the prioritisation of industrial use in certain circumstances and community and environment use and agricultural use in other circumstances. It is a very limited resource that we are dealing with at this point in time.

Mr JOHN WILLIAMS: No doubt. The other aspect of it is the fact that we have gone through a procedure of separation of land and water. We have acknowledged that water is now a property right to those people that hold the entitlement, so if a decision is made to give them an entitlement, it is up to the individual on how he deals with it, in regards to whether he puts it on the open market or consumes it in his own interests.

Mr COHEN: I appreciate that from one perspective, but I think we are dealing now in general terms with constraints on all sorts of activities, be it in the city or country. I am not just talking water here, but there are people who have other constraints on how they might use their land. I do not think it should be an automatic entitlement that the person or the organisation that pays the highest rate for a particular resource like this should have a priority over the other constraints, be they social, environmental issues.

I think it is important that we recognise that this is a resource that is potentially in the public interest, somewhat greater than a price tag on that particular resource. I think it is important that we recognise the spin offs of other uses of that water.

Personally I think that individuals, farmers, et cetera, or users that get a certain allocation under those very limited circumstances and then on sell, it might sit well with some but I don't think that it is necessarily the best way to use what is essentially a community resource.

CHAIR: I was going to ask a similar question on groundwater. Surely it is the science of the replenishment of the aquifer and what its inter-relationship is with surface water? I know that there are numerous water bodies, they might be close geographically but they are not directly related, to confuse it by saying that it is all part of one system in that area is misleading.

Mr COHEN: I take your point on that but I say that the bigger issue here is the lack of understanding of the aquifers and the potential and the running down of those aquifers overall. I think that is also an extremely important issue that needs to be continually investigated. Sometimes we have setups where there is impact on the aquifers and not a great deal of scientifically based knowledge is being used in terms of aquifer use. I think that that is something that needs more investigation.

CHAIR: The other question which follows from Mr Williams as well; is you spoke about some mix of skills that should be required of members of these Critical Water Advisory committees. Could you explain what sort of skills you would like to see committee members have and whilst you are doing that, address your answer through the comment you made regarding your concern that some members of these committees have significant financial interests or pecuniary interests in the water; they are a large employer for instance and through your submission you suggest that they probably should not sit on these committees.

I would say surely they would have all those skills that you would be wanting in a committee member and as a significant community leader through that business, wouldn't those skills be essential to be on the committee?

Mr COHEN: Those skills are essential but if you are talking of major industrial users that stand to benefit from decisions of that committee, then I think in many instances in our political environment in New South Wales those sorts of interest groups would be disqualified and I think it is important to recognise that that type of interest can have an impact, perceived if not real, but I would suggest also real.

CHAIR: Sure, but these are only advisory committees, they are not decision makers.

Mr COHEN: Nevertheless, you have been around enough to know that that sort of advice goes to the Minister's advice and at the end of the game it is a pretty powerful pressure to make decisions on that matter. What I am saying there is that there can be other valid inputs, particularly from local community. Might I say also, Aboriginal organisations have expressed to

me real concern at the state of the rivers at certain times; that they feel they have no say in the matter.

One of the things that really concerns me is that a lot of these decisions are siloed off to what is good for particular industry at a time and then there are downstream users that suffer. In terms of Aboriginal people, there is a lot of interest and need, might I say, for the maintenance of the environmental flows of these waterways. It even reflects on the health of the community itself. If you have got a waterway flowing, you have got kids and people down there fishing and swimming and not being distracted in other less socially productive ways. So it really does spread right across the board in terms of having a healthy community. I think these other issues need to be taken into account.

Mr RAY WILLIAMS: You raised in your submission the importance of environmental flows and in particular the inability of rivers to dilute the increase in saline water in the future. I just wondered if you had any comments in relation to the Hawkesbury River on two aspects. With the Hawkesbury River, currently the only environmental flows that it has is via the 30 sewerage treatment plants which inject their partially treated water into the river, which incidentally is then drawn back out for the potable water use of the residents of Windsor, Richmond and surrounding suburbs.

That chemical cocktail injection of nutrient rich water that goes in there obviously increases the potential for weed infestations, et cetera. How do you balance environmental flows if there are no environmental flows apart from sewerage treatment or partially treated sewerage treatment water into to the river?

Mr COHEN: You are dealing with an environment there that has had a massive human construct that has thrown it completely out of balance. We are dealing with a highly regulated set of circumstances with what is essentially Sydney's water supply and it is a reality. I don't, in principle, think that it is wrong to re-use sewerage effluent. In fact, I think it is something to be encouraged because of the necessity.

It is reflected out west where the river goes through systems many times over and in this circumstance I think that there needs to be greater attention paid to the level of treatment that is occurring and also the health of the catchment itself.

Forgetting about Warragamba just for a moment, all those other areas with a higher level of treatment and up to tertiary polishing, if you like, of the system and then getting back to industries that are contributing to the pollution; often the worst is not so much the biological input classic sewerage works, the biggest problem comes from chemical input that is far more difficult to deal with.

Therefore, you have got to get back to source. I have no doubt that if there is enough attention brought to bear on source pollution then you can create a much cleaner flow to the point when communities of Windsor, et cetera, as you say, have to be using that. So really it is a matter of greater attention to the details of both the processes of rehabilitating the water but also the catchment improvements so that nature can take its course.

All water is recycled, one way or another and I think that rather than looking at the mistrust of dealing with a recycled product that might be through a sewerage works, I think we really need to have a bit of maturity in the debate and get that process happening in a way that is more effective.

Mr MARTIN: Just in relation to the various definitions of high security water down through the various criterions, are you happy with the criterions given to each of these in terms of what sits under high security and so on or do you think that that is an area that needs revamping or relooking at?

Mr COHEN: I think you are right. I think there is a need to relook at that. I even have a bit of a problem with calling that high security. It seems to be a bit of a misnomer. I think that we are talking industrial use in many circumstances and then we have got the regime of community and environmental use, particularly the environmental use as you could imagine from my point of view, does not get a guernsey until after the event or is the aspect of the debate that is considered last.

I think overall we have got to look at appreciating, particularly in times of drought in these very sensitive areas, that if we do not maintain the environmental flows, if we do not keep the

integrity of the river and the wetland systems going in difficult times, then we really all lose out eventually.

Mr MARTIN: At the moment under high security you are looking at maintaining perennial crops, vines and so on and also communities, making sure there is water in communities. Surely they should be the two highest. Can you think of anything else?

Mr COHEN: But then when you are looking at industrial use as being given that high priority, from my perspective that should not be judged over community and environmental use.

Mr MARTIN: It could be part of the community surviving. If you take the industrial users out the community dies.

Mr COHEN: Sure but I think often we see that as being presented as the saviour to a community. Of course, there are jobs and it is an industry that is functioning, but there are also jobs and functioning industries in areas of agriculture that need to be supported and to understand that farmers are economically encouraged to allow crops to die on the vine and then on sell to mining interests does not really add up in my book in terms of a sustainable economy and society. I would say that it should be the other way around - the mining interests should either find ways of functioning on less, more recycled and being better corporate citizens in those communities rather than taxing the food industries, for example.

CHAIR: Thank you so much for your time and also your interest in this Committee's work.

Mr COHEN: Thank you for allowing me to say my bit on the day and if there are any other questions, I am happy to take them on notice and answer them.

(The witness withdrew)

SUE-ERN TAN, Deputy Chief Executive Officer, New South Wales Minerals Council, Level 3, 12 O'Connell Street, Sydney, affirmed and examined:

CHAIR: Thank you again for showing interest in the work of this Committee and particularly today to provide evidence. I have been advised that you have been issued with a copy of the Committee's terms of reference and also the Legislative Assembly's relevant standing orders. Is that correct?

Ms TAN: That is correct.

CHAIR: I just draw your attention to the fact that the evidence that you are giving is under Parliamentary privilege, which will give you general protection from legal or administrative action. Under the Parliamentary Evidence Act there are also issues relating to misleading evidence to the Committee. Would you care to make an opening statement?

Ms TAN: Sure. I have given you Powerpoint presentations, some of which is very repetitive and you do not need to look at it. There are only two in particular that I will draw your attention to and I will draw your attention to them at the relevant time. It is graphs, because I find them easier to look at than words, and also that we will be making a formal submission, it is running a bit late but you will get it by the relevant due date, which I think is this week.

The New South Wales Minerals Council represents the minerals industry of New South Wales, which we believe is one of the key drivers of the New South Wales economy. We were in fact the second highest revenue earner for the State Government this year, after the poker machines, but we are trying.

We have an estimated value of about $23 billion for 2009/10, our production is very substantial. Coal is the major producer, it is about 70 per cent of that figure and metallic minerals are about 20 per cent and the remainder is basically industrial minerals and construction materials.

The minerals industry directly accounts for two per cent of gross state product; 75 per cent of this is earned through export. We are actually the State's largest merchandise exporter and we account for about 35 per cent of New South Wales total export income.

The mining and minerals processing industry directly employ 47,000 people. These are obviously mainly in regional towns and cities, many of which most of the membership is from. We also indirectly support about 200,000 jobs throughout the State because we pay our people very well, so we have a very high multiply employment figure.

I want to highlight three key issues of how the mining industry deals with water. The first one is about the way we try and maximise the value of water. The second issue is about how we are managing water at the moment and the third issue is some of the best practice examples that we are working towards as an industry.

Firstly, obviously the metals industry in New South Wales is acutely aware of the value of water, from both commercial and clearly a social perspective. We are committed to maximising the value of the water that we use. We want to work closely with all of our stakeholders to continually improve the management, use and conservation of water, particularly as climate change will continue to impact the water availability in New South Wales.

The economic value produced from water used by the minerals industry is higher than any other industry and this is where I will refer you to the third last graph, which highlights that the minerals industry has an average value of $80 per cubic metre of water used compared to 40 cubic metres for the industrial sector and about five cubic metres for the agriculture industry.

We also are a comparatively small user of water in New South Wales and I will refer you to the pie chart. This is from the ABS water account figures, unfortunately they were the most recent figures we could get our hands on, but it does highlight that the mining industry consumes just over one per cent of the entire State's water consumption. That is about 63 gigalitres of water out of the 5,920 gigalitres consumed in New South Wales in 2004/05 and this is compared to agriculture, which is about 70 per cent and the water supply industry, which includes distribution losses of 11 per cent and households of about 10 per cent of water.

The other quick point here is to note that the regulatory framework that is in place in relation to the minerals industry and our water use is substantial. It affects all aspects of a mine site from expiration to closure. Water is given particular attention with an extensive number of requirements that must be met before a mining proposal is approved.

For example, as part of our environmental assessment requirements under part 3A of the Environmental Planning and Assessment Act 1979 a study must be conducted that provides the following in relation to water: A detailed site water balance; an assessment of the potential loss of surface and groundwater flows to the environment and other land uses; an assessment of potential water quality impacts on the environment and other land uses, including importantly salinity impacts and finally, a description of the final void water management.

There is also a detailed list of guidelines that must be taken into consideration alongside our reporting requirements and these will be detailed in our full submission.

Obviously we aim to meet and in many cases try and exceed the requirements that are imposed on us by government and we always try and establish leading water management practices.

Just very quickly on the water management issue, we are very acutely aware, as I have said, that water is a critical resource and it is also for our industry one of our most important business inputs, as it is in the same way for a lot of the other primary industries such as agriculture.

We try and take a strategic approach to the way we manage our water to ensure that it is efficiently managed and valued as a vital business community and environmental asset. This includes our strategic water planning, constantly improving operational performance and building relationships with stakeholders to generate mutually beneficial outcomes.

We are moving towards as an industry finding alternatives to using fresh water at our sites, such as things like recycling and re-use of water at various points in our operations.

A number of mine sites such as Cadia Valley now use mostly recycled and effluent water, both of which are water sources that cannot be used by a large number of other water consumers or users.

For example, with Cadia Valley operations, it sources 30 per cent of its water from Orange and Blayney City Council's effluent and clearly this lower quality water can be used directly for functions such as dust suppression on our sites or it can be treated to a higher water quality on site.

With Cadia's newest mine, which has just been approved, Cadia Valley East, only 10 per cent of that water will be new water. Eighty per cent of the mine's water supply will be recycled water and the remaining 10 per cent will be treated effluent from Blayney and Orange. I think that is a very good example of some of the innovations.

Mines also often use water that is simply unsuitable for other uses, such as deep saline groundwater or effluent from town sewerage. As I have said, this lower quality water can be used for dust suppression or treated for higher quality.

In fact, in many mines a large proportion of our water is obtained through mine de-watering, which is just a removal of excess run-off and groundwater seepage into mines. This water can be used during production, returned to the environment which is often done, or shared with other local mines, towns or industry.

We also highly value the positive contribution that recent innovation makes to the improvement of water management systems, which is why we have invested a substantial amount of money in research organisations such as the Sustainable Minerals Institute in Queensland and the Australian Coal Association research program.

Finally just to highlight some of the industry best practice that is being developed at the moment in the area of water management, one big example is water accounting framework, which is a recent demonstration of an industry initiative in relation to water management as part of the development of the national water accounting framework, which is part of a wider Federal Government water matrix program.

We started a program in 2007 to look at how we could develop such an accounting framework for the minerals industry. It has actually been piloted in the Central West of New South Wales and at the moment we are just finalising that framework to be developed for use by the minerals industry.

It is a partnership of the Minerals Council of New South Wales and the Minerals Council of Australia and what we are trying to do is develop a more comprehensive framework that will improve the level of water management and knowledge on sites, allow us to provide greater consistency in how we report and enable water accounts to be generated at each site.

This is really important because it will allow for benchmarking across the industry and for us to continually improve in water management. This level of commitment puts New South Wales mining industry at the forefront of implementing the principles of the Federal Government's national water initiative. Now I will take questions.

Mr RAY WILLIAMS: Could I just ask what you feel will be the impacts of the new 40 per cent increase in tax on super profits in relation to your industry and will that impact on your water management techniques and practices that you have undertaken? Given that impact on profits, will that see you winding back some of your more responsible recycling activities, given the drop in profits to your industry?

Ms TAN: Obviously we will continue to be committed as an industry to all of the environmental requirements and impacts that we might have in this industry, including particularly on water and it is a commitment that we have and will continue to oblige by.

But clearly the 40 per cent tax by the Federal Government is going to have an incredible impact on the mining industry in terms particularly of the fact that it will affect existing operations, so there are a whole set of issues that that will raise for people that have already done their calculations for these projects. Even the impact on future projects, we have already heard people like the Canadian minister come out and say: That's great news. We can have more projects being invested in Canada and in other countries because Australian tax rates are so high and it will discourage mining to occur in Australia.

It is something that we are seriously worried about as an industry. We are obviously talking to the Federal Government. We are talking to the State Government and we are clearly doing all the calculations necessary to highlight that in fact the mining industry makes more than its fair share contribution to the people of Australia and to the people of New South Wales.

We contributed last year $2 billion to the New South Wales Government, that is just the New South Wales mining industry and we are clearly not as big as Queensland or WA and they are very big contributors as well to their State Governments.

It is worrying for us in terms of future investment and current investment in Australia and in New South Wales in particular, but clearly we will try very hard to never jeopardise our commitments to continually being at best practice levels for not just water, but safety and other environmental impacts.

Mr RAY WILLIAMS: Very commendable, but I guess if you have got to look at ways of minimising your costs, some of your best practices that you implemented, certainly that would have to be wound back, if it cuts into profits that significantly?

Ms TAN: Obviously that is part of the figuring that we need to do in working out the numbers of it, but clearly we understand that we are a member of the community in which we operate, we are very conscious of the fact that we have an impact on the communities we operate in and that affects our social licence to operate. If we do not meet the obligations and work continually towards best practice, our impacts on our social licence to operate are very, very large and we are very concerned about that.

But yes, obviously more generally in terms of having a 40 per cent tax on your profits, not your super profits, but in fact just your profits, is clearly a problem for us as an industry and it might be a case more about the number of projects that continue and the number of jobs that we have rather than the quality of the best practice that we are committed to.

Mr MARTIN: Is it true that the mining industry will, as an offset for this resource tax, get exemption from State royalties?

Ms TAN: That is not what will happen. The State royalties will continue to apply. There will be a refundable credit from the Federal Government up to the amount as of the day of the announcement, which was 2 May. If State Governments choose to increase royalties in the meantime or impose other additional charges and taxes and levies - which this government has a

tendency to do - they obviously will not be refunded by the Federal Government. So it is capped at the amount as of 2 May that the mining industry paid, which at the moment is $1.28 billion.

Mr MARTIN: You heard some evidence from your predecessor, who I think is probably happy with the resources tax.

Ms TAN: I am sure he is.

Mr MARTIN: In terms of the mining companies not being good corporate citizens out there in communities - it is not a point I agree with, but have you got any response to that? In terms of usage of water and how much of the water share they take back in the community. Would you like to set the record straight on that?

Ms TAN: Unfortunately I didn't necessarily hear all of the detail of it because I did pop out.

Mr MARTIN: Basically the accusation is that mining companies in the region are not good community citizens because of their rapacious appetite for water and resources.

Ms TAN: I have highlighted I think in our submission the fact that we are in fact a very small water user, but we do acknowledge that in some communities we are one of the major users. But as much as possible we do look for other sources other than using water from groundwater or surface water run-offs. We do look to recycle as much as possible and I think Cadia is a good example of that.

Obviously my predecessor, as a member of his political party, has raised many concerns about the impacts of mining more generally and we accept that there is clearly some community concern about our impacts and it is something that we need to do better to address, but that is why we try and get the facts out as much as possible about actually how much water the mining industry uses and what is the economic contribution that we make back. But unfortunately not every member of the media and others like to hear the good news story - they sometimes like to hear the bad news story.

Mr MARTIN: In the case of the Central West area, the generalisation that the industry uses one per cent of water, we know that if you take that globally over the State that is true but the reality is where the mining activity takes place is where the water is scarcer.

Ms TAN: Yes.

Mr MARTIN: Certainly the community in the Central West around Orange at the moment are very much consumed with the impact that Cadia will have.

Ms TAN: Yes.

Mr MARTIN: You did say that at the new East Cadia development 80 per cent of the water will be recycled. That is not coming from the sewerage treatment or the grey water?

Ms TAN: No, it is 80 per cent recycled, 10 per cent will be new water.

Mr MARTIN: Where is this recycled water from?

Ms TAN: I would assume - can I get back to you on that - but I would think it would be from the existing Cadia operations and just recycled on site, because we tend to run the water over and over again that is already on site. So it might come from the existing Cadia operation, but I will come back to you with finite details on that.

Mr MARTIN: That is very significant if that is the case.

Ms TAN: I will come back to you on that so I do not mislead.

Mr RAY WILLIAMS: Can I suggest on that point, if it was like a carwash, the initial quantity of potable water would be used in the carwash and then your recycling would come from cleaning that water and repetitive use. Do I understand that correctly and that is how the mines work also?

Ms TAN: I think actually the potential is that in fact 80 per cent of water is just recycled, we are getting it recycled full stop, but I will clarify. It is not 80 per cent clean water that gets recycled.

Mr RAY WILLIAMS: It is 80 per cent recycled that you are getting already?

Ms TAN: That is right, but that is what I will clarify and get back to the Committee on.

Mr JOHN WILLIAMS: Within the industry would there be a move to try and set some benchmarking for consumption by mining? Obviously within the prospectus or calculation for a new mine the consumption of water would be a point that would need to be built into that study. Within the industry is it possible to suggest that there are more efficient managers of water than others?

Ms TAN: Sorry, within the industry, the industry players themselves?

Mr JOHN WILLIAMS: Yes, within the mining industry.

Ms TAN: Obviously I do not know the details of every single mine and their use of water. As an industry association and as an industry we are always encouraging best practice in terms of how we use water and we try and always highlight to our members good case studies where people have developed more efficient ways of using water.

I think that the implementation of this water accounting framework, which I mentioned to you, will be a really good start, because it was actually accurately measure how much water we use and the recycling rates, et cetera, in a way that we can compare apples with apples and try and encourage the whole industry to go forward.

But as I said, obviously the Henry 40 per cent super profits tax or profits tax is a key concern for the industry and we will continue to work out exactly the numbers and negotiate with government the full impact of it on the industry.

CHAIR: We have seen a lot of innovation from the mining industry in their management of water and other environmental issues. How can the government assist the industry to manage water resources more effectively or what is the government doing right now that is assisting the industry? Is our Office of Water helpful? Do you work with them?

Ms TAN: Because of the way the water is managed at the moment in New South Wales we have some of our mines still operating under water licences granted by the Office of Water under the Water Act 1912 and then obviously the water sharing plans which we are moving towards, but not all of them are in place.

We are having a lot of problems with the water licences that need to be approved by the Office of Water. There is a lot of delay in the granting of water licences. I am happy to provide the Committee with some specific examples, but these are not 21 day delays, a couple of months delays, these are substantially long delays in us getting the water licences, which is problematic because clearly we need water for our operations and we do not want to breach any legislation in carrying out our operations.

That I know is a continuing concern for some of our members who are yet to move across to the water sharing plans under the 2000 Act and are still stuck under the 1912 Act. That is something that we have continuously raised with government as an area that needs to be fast tracked and needs to carry on as quickly as possible.

I think in terms of the innovation of the mining industry, that is certainly something that we do and we need to continue to do. It is important for us to promote that as an industry, as part of our good corporate citizenship. Whether or not the department can be more helpful, I think if they can fix the issues about granting the licences as quickly as possible, that would be a great help to the industry, because it frees up our resources to actually continue to do things like being more innovative and to implement those practices. That would be my comment in terms of the New South Wales Government.

The other side issue as well, within the New South Wales Government - and it is something that we have raised before - to look at ways to streamline its approval processes between the various government agencies so that once we get the approval from the Department of Planning, then we need to talk to the relevant catchment authorities, to the Office of Water. You are reporting about the same issue to three different government agencies.

This sort of stuff is just bureaucratic; it is just a waste of time. It does not get a better environmental outcome for the government or for the people of New South Wales and I think that that is something that the government can focus on and I am happy to provide some examples again within our submission, because we have raised this point before.

CHAIR: Thank you Ms Tan. That would be very helpful to the Committee to get that question followed up of what the government is doing well now and where we can improve. This Committee will be serious about its recommendations to government and we would like to see recommendations that are of benefit to the overall community of New South Wales.

Mr MARTIN: In a previous briefing with us you spoke about the water matrix program that the Minerals Council has developed. Just for the record can you give us a brief overview of how you think that has progressed and what the benefits of it have been?

Ms TAN: That was the water accounting framework, the water matrix framework that I mentioned before?

Mr MARTIN: Yes.

Ms TAN: We have done the pilot in the Central West New South Wales involving some of our members out there and we are just getting the results collated at the moment and finalised for implementation. There are academics involved and it takes some time to get the figures finalised, but as I said, the outcome of that framework is to develop a more comprehensive way of how we manage water and what our knowledge is of water on particular sites.

As I mentioned to Mr Williams, that is part of our being able to then provide greater consistency in reporting across the industry and then benchmarking across the industry as well, which I think is a critical thing for our self improvement.

Mr MARTIN: Would we be able to get the results of that pilot program and maybe if it is in time, it might be something we could incorporate in our deliberations?

Ms TAN: It is something I certainly will try. I do know that it has not been made publicly available, and by that I mean even to us, the industry at the moment because obviously there are some universities involved and they are just collating the results. It will become available and when it does I am happy to provide that.

CHAIR: Thank you so much for your time and efforts again.

(The witness withdrew)

The Committee adjourned at 3.24 p.m.