REPORT ON PROCEEDINGS BEFORE

PORTFOLIO COMMITTEE NO. 5 – INDUSTRY AND TRANSPORT

WATER AUGMENTATION

At Orange on Wednesday, 17 May 2017

The Committee met at 1:00 pm

PRESENT

The Hon. R. Brown (Chair)

The Hon. R. Colless
The Hon. P. Green
Mr S. MacDonald
The Hon. P. Sharpe
The Hon. M. Veitch (Deputy Chair)

UNCORRECTED TRANSCRIPT

The CHAIR: Good afternoon. I declare this hearing open. Welcome to the seventh hearing of the Portfolio Committee No. 5—which used to be called the General Purpose Standing Committee No. 5, a much better title—Industry and Transport inquiry into the augmentation of water supply for rural and regional New South Wales. This inquiry is examining water demand and supply, the suitability of existing water storages, flood history and technologies to mitigate flood damage, and water management practices including that for environmental water.

I acknowledge the Wiradjuri people, who are the traditional custodians of this land. I also pay respects to the elders past and present of the Eora nation and extend that respect to any other Aboriginals present. Today we will hear from Central NSW Councils [Centroc], the Daroo Orange Urban Landcare Group, the Orange Speleological Society, the Orange and Regional Water Security Alliance and Save Cliefdon Caves Association. We will finish with representatives from the NSW Irrigators Council, the Belubula Landholders Association and Mr Joe Curran, primary producer.

Before we commence I will make brief comments about procedures. In accordance with the broadcasting guidelines, whilst members of the media may film or record committee members and witnesses, people in the public gallery should not be the primary focus of any filming or photography. I also remind media representatives that they must take responsibility for what they publish about the Committee's proceedings. It is important to remember that parliamentary privilege does not apply to what witnesses may say outside of their evidence at the hearing, and so I urge witnesses to be careful about any comments they make to the media or to others after they complete their evidence or before they take the stand as such comments would not be protected by parliamentary privilege. The guidelines for broadcast of proceedings, for those unfamiliar with them, are available from the secretariat on the side bench.

There may be some questions on notice that a witness could only answer if they had more time or with certain documents to hand. In these circumstances witnesses are advised that they can take questions on notice. Those questions will be provided to the witnesses in writing, and we request that an answer be provided within 21 days of receiving such questions on notice. Witnesses are advised that any messages from staff or advisers should be delivered to the committee members through the committee staff. To aid the audibility of this hearing may I remind both committee members and witnesses to speak into the microphones. In addition, several seats have been reserved near the loud speakers for persons in the public gallery who have hearing difficulties. I ask that mobile phones be turned off or turned to silent.

GARRY BEVAN STYLES, Board member, Centroc, and General Manager, Orange City Council, sworn and examined

WAYNE ROBERT BEATTY, Deputy Chair, Water Utilities Alliance, Centroc, sworn and examined

MEREDITH ANNE MACPHERSON, Water Utilities Alliance Program Manager, Centroc, sworn and examined

ARTHUR JOHN MEDCALF, Acting Chair, Centroc, and Mayor, Lachlan Shire Council, sworn and examined

KENT ROBERT BOYD, Board member, Centroc, and General Manager, Parkes Shire Council, sworn and examined

WILLIAM JAMES WEST, Board member, Centroc, and Mayor, Cowra Shire Council, sworn and examined

DAVID ROBERT SOMERVAILLE, Board member, Centroc, and Chair, Central Tablelands Water, sworn and examined

The CHAIR: I welcome the witnesses from Centroc. We have received your submission No. 66, and before we begin I would like to put on record the Committee's gratitude for your helping us this morning to look at the dam site and a couple of other issues related to flooding. I would also like to express our thanks to Orange City Council for showing us the stormwater reclamation site yesterday, which was very informative. Before we proceed to questions from the Committee, I invite you to make a brief opening statement.

Mr SOMERVAILLE: Thank you, I will make a brief opening statement. Centroc appreciates this opportunity to address this public hearing and supplement the information which we provided in our written response in August last year. Centroc represents the collective views of its 15 member councils, endorsed by their mayors acting as the Centroc board. We take a regional perspective in relation to water security. Individual councils may have individual issues, but we take a regional view acting as Centroc. It is therefore the standing committee's window into the view of local government in relation to water security in this region. The millennium drought exposed the vulnerability of the Lachlan Valley to the consequences of water shortages. There were severe impacts on both town water supplies and economic activity. The Lachlan catchment has been found to be under more stress than any other in New South Wales—not in the sense of a lack of available water but relating to water management. In addition to that, it is apparently over reserved when it comes to buy-backs of environmental water.

The interests of Centroc is at two levels. Firstly, our principal focus and one of the key priorities of the whole of Centroc board is in relation to adopting a regional approach to town water security. Centroc councils all operate local water utilities so the security and availability of town water supplies for the communities in the Central West is core business for the councils in this region. There were severe water shortages some five or six years ago, and that led to a commissioning by Centroc of a water security study. At that time the study found that 29 communities were at risk. Demand management alone could not deliver the necessary security and additional storage was recommended high in the Lachlan catchment, with linked distribution systems, as the best method of achieving the necessary water security for drinking water for the communities in this region.

Secondly, our focus was on facilitating sustainable economic development for the region. Agriculture and mining are two prime economic drivers in this region, and the lack of storages and security of water supply is limiting the growth of those industries. Centroc has collaborated with the Lachlan Valley Water and with the Belubula Landholders Association in relation to that aspect of its interest in your inquiry. Centroc is therefore a strong advocate of new water storage high in the Lachlan catchment. The extra water security high in the catchment would address both the town water issues and the irrigation water issues, which are our two primary concerns. Those are our opening remarks. We are happy to take questions.

The CHAIR: Thank you very much.

The Hon. PAUL GREEN: Thank you for your presentation. You have been talking about decentralisation from Sydney. You are obviously wanting to build your professional abilities throughout the region in terms of workers and labour. What is the water supply like in addressing your future needs and population growth?

The CHAIR: Throughout the region.

The Hon. PAUL GREEN: Yes, throughout the region.

Mr SOMERVAILLE: Each of the local government areas in the region has its own water supplies. Some of them are above-ground dam water storages; others access aquifers; others access water held in some of the large State dams, which is released for town water supplies. The issue that needs to be made here is that whilst town water is the number one priority when it comes to the regulations under the Water Management Act, there is no quarantining of water for town water supplies, where those town water supplies are mixed with water that is stored for other purposes. You would get a slightly different answer depending on which local government area you refer to.

The Hon. PAUL GREEN: I understand that. I am throwing it across the panel here. I guess my question is, basically, is there a hindrance to growth in your particular areas based on water shortages?

Mr STYLES: During the millennium drought Orange was dreadfully short of water, and it impacted heavily on our prospects for growth. Out of Centroc strategy we have done some augmentation works with pipe heights and, as has been said, a multi-source supply. Now we have capacity for growth. As the chairperson said, there would be various towns at different stages on that journey, across the Centroc region.

The Hon. PAUL GREEN: You just stated that there are limited opportunities for economic growth on the current water situation.

Mr SOMERVAILLE: Yes.

The Hon. PAUL GREEN: I guess what we have been trying to collect in evidence is the potential economic growth of the area, and what is the potential dollar hindrance if that is not met—the high and the low of the situation.

Mr SOMERVAILLE: I can give you one example where lack of water is hindering growth. That example is in relation to mining. The region—particularly up in the Central Tablelands—relies a lot for its economic activity on the very large Cadia mine owned by Newcrest. There is another potential mine—it is being developed at the moment and getting close to an environmental impact statement stage at a place called Kings Plains. The one reason why that may never go ahead is the lack of water supply. Because there is no water storage in this region with sufficient capacity to service that mine they are looking at other options. It would be a great tragedy if that did not go ahead through a lack of available water close by. That will generate some 260 jobs during construction and about 160 during operations.

Mr STYLES: We could take that on notice and use the figures from the Centroc study to give you a snapshot of where it is at for each and every one of them.

The CHAIR: That would be very helpful.

Mr STYLES: Then we could compare it to the growth rates of the various centres to see where it crosses over to a problem.

The Hon. PAUL GREEN: That would be helpful. It is a very important thing for New South Wales to answer because we talk about being the food bowl and we talk about the food and fibre industries, but if we cannot supply affordable water—not just water—we are not going to get the growth we want in regional New South Wales.

Mr STYLES: We just need to take that on notice because it is complex.

The CHAIR: Thank you. Just to clarify, Centroc's position is that there should be the provision of extra storage high in the catchment. You also mentioned "and networking of those supplies". It would strike me, from what we saw this morning, with the proposed Cranky Rock catchment dam, that without the networking you probably would not get anywhere near enough synergy for the whole of the Centroc area—in other words, you could not take water from one to the other.

Mr SOMERVAILLE: Yes, the water security study I referred to earlier not only recommended additional storage but recommended a network of pipelines linking all the existing water supply systems around the regional towns and the regional villages to deliver a sort of portfolio effect. All the storages would be linked so that if the network works properly they could, effectively, be regarded as a single storage, where water could be transferred, as needed, between various supply networks.

The CHAIR: Was that water study appended to, or included, in your submission?

Ms MACPHERSON: It was referenced as a link to the Centroc website.

The CHAIR: It is available on line?

Ms MACPHERSON: It is, but we are very happy to provide you with a copy.

The CHAIR: No, the secretary can find it and have a look at that. Thank you very much.

The Hon. MICK VEITCH: I, too, would like to extend my appreciation to Mr Beatty for showing us around yesterday. That was quite interesting and informative. I thank Ms Macpherson, Mr West and Mr Somervaille for showing us around this morning, and taking us on that mystery trip. That was quite an interesting trip, as well. I have three things I would like to question you about. If I run out of time I will put them on notice.

The first question is to do with managed aquifer recharge. The Committee has been looking at that. Quite an extensive paper has been provided to us from Orange City Council, I believe. To establish a large-scale managed aquifer recharge scheme in New South Wales at the moment, what operational data is lacking, and how important would it be for the State Government to undertake the mapping of our aquifers?

Mr BEATTY: As you are aware, we provided that information—that business case—to you. It was done back in 2011. It gives some recommendations to look into doing a trial. It is part of a MAR, called an ASR, which is an acronym—

The CHAIR: Would you like to describe those acronyms?

Mr BEATTY: MAR is managed aquifer recharge and ASR is aquifer storage and recovery. ASR is a subset of the bigger picture. As a result of that study there have been some recommendations put—and all subject to funding, obviously, because we are talking about millions of dollars to do such a trial. It recommends that we do an ASR trial and look into things like water quality, the impact of injecting and then removing water out of the aquifer. It is a fractured basalt rock aquifer we are talking about in this region. It identifies two sites where we can do this particular trial. Obviously there has to be a lot of work done in gathering data and looking at the impact on groundwater levels, streams and river systems. It recommends to go to a stage 2, which is doing that trial.

The Hon. MICK VEITCH: Have there been any discussions about moving to state 2?

Mr BEATTY: No, there have not. We have the document there and we have included in about year 10 in our current long-term management plan—our long-term financial plan. It is all subject to some external funding for us to continue that project.

Mr WEST: I think across the Lachlan-Belubula system there is a significant need for some ground truthing of aquifers and determining where the aquifers may be, the origins of those aquifers and how best they are managed. Then I think that will enable the State to look at recharges on a regional basis and an aquifer basis. This morning we looked at what happens in the Belubula. That might be a slightly different case to what happens around Orange. There is a real need to sit down and identify the aquifers and the capacity of those aquifers.

The Hon. MICK VEITCH: Are you saying that work has not started, Councillor West?

Mr WEST: I am not sure that it has accurately charted or whether the information is fully out there and available yet, but I know in the millennium drought there were aquifers around, tributaries of the Lachlan, which were severely under threat, in danger of collapsing, but it became late news to the irrigators at that time.

Mr BOYD: In answer to your question, the groundwater across the Lachlan is complex. There is some shallow, some deep, some works well and some does not work well. I do not think it is well understood. So in answer to your question, yes, it would be extremely valuable to develop up a model over a period of time which can then be calibrated in real terms. As those bores go up and down and the rivers move, it is a matter of calibrating models so that you can understand how they will respond. If you look at the hydrogeology resources in the department at the moment, you will find that there has been a great reduction from what there used to be in the State Government departments to critically monitor all the wells and develop those models. I think you will find there is quite an absence, but I guess that is something that would be worthwhile this Committee investigating.

Mr STYLES: I guess what we are saying here is the solution from our point of view on the urban water supply is a multi-source kit of parts. We are talking about high storages. We are also talking about research and development [R and D] that needs to happen because it could well be a substantial player in the future and, absent assistance, it may not happen in a timely sense. We are also talking about demand management and a whole range of things. From our study there is the whole kit of parts, if you like, that works together both to muster the necessary supply beneath the environmental conditions, but provide that degree of redundancy over a multi-source supply. An essential element is the high storage, and that is one of our key priorities, but there is also a range of other things that should be brought into the equation. Obviously some R

and D investigation into some of the alternate sources, which is part of your brief, is probably part of that in our view.

The Hon. MICK VEITCH: I want to pick up on the Hon. Paul Green's line of questioning relating to affordability of water. My questions relate to the role that the Independent Pricing and Regulatory Tribunal [IPART] has in setting charges and fees for water. Can I garner your views on the methodology that is used by IPART, the rigour that they put into the calculation, and any suggested improvements? I know that is a big area, but feel free to advise with some suggestions. We have IPART coming to sit in front of us in a few weeks so we are pretty keen to have some information upon which we can draw some questions.

The CHAIR: We will even take opinion.

Mr WEST: On water pricing or on IPART?

The Hon. MICK VEITCH: Let's start out with water pricing, Councillor West, and we will go from there.

Mr WEST: I am not sure that the IPART has a significant impact on urban water supplies in the context that water to the urban utilities is not the most expensive part of the operation. But we think the irrigators would have a significantly different answer.

The Hon. MICK VEITCH: That would be fair to say.

Mr SOMERVAILLE: I think you will find that IPART is the pricing regulator for Sydney Water, Hunter Water and a few of the other authorities in metropolitan areas, but it does not have the same role when it comes to setting water prices for local water utilities in regional areas.

The CHAIR: Yes—setting domestic water supply prices.

Mr BEATTY: The way that is regulated is through best practice guidelines which are regulated by DPI Water or what used to be the Office of Water, so we are regulated from a pricing viewpoint for urban water through that department as opposed to IPART. That is for urban water.

The Hon. MICK VEITCH: On the new structure of the water bureaucracy in New South Wales and the changes last year, we heard yesterday—and we have heard in other parts of the State in Deniliquin and Griffith—that particularly amongst the irrigators there is a real confusion around who has what role at the moment but there is also a bit of churn within the position holders within those authorities. Are you experiencing the same thing here or is it a bit more consistent and stable?

Mr WEST: I am quite happy to let the experts answer this one, but as the chair of Centroc at the time of the pilot joint organisation it was rather frustrating trying to determine who we should deal with, who was involved with water, what their capacity was and what appeared to be almost a revolving door in terms of opinions and policies. The back page of our submission showed the flow chart, if you like, of people we were required to deal with. The second part is that it was difficult getting some forward traction with them.

Mr SOMERVAILLE: I can add to that that there is some sort of confusion as to the roles between Department of Primary Industries [DPI] Water and WaterNSW and a shifting of responsibilities between the two of them. Also, when it comes to local water utilities in regional New South Wales not only have they got those water regulators to whom they are answerable but, being in local government, we also have the local government regulation under the Local Government Act. So not only is there regulation from a water point of view; there is also regulation under the Local Government Act. So we have two regulators and within one regulator—the water one you were talking about—there are the shifting sands between those two bodies.

The Hon. PAUL GREEN: Which would be the best one to operate under if you had to move towards one system instead of dual systems?

Mr BOYD: In answer to that, the other issue in relation to this is that there is no overarching strategy about what we are trying to achieve in relation to the water compliance. There are water resource plans, there are State plans, there are regional plans and there are local plans. The water plan should at least point to, for instance, the Premier's priorities about growth, development and what have you. But the plans at a regional level—including water but also including planning, agriculture and all those—need to be pulled together so that they are all pointing in the same direction. The issue we have at the moment is that none of these plans talk to each other. They are all quite disparate.

We have attempted to map some of them on the back page of our submission in relation to water. There is also our regional growth plans and there are so many plans, but they are quite disparate, and there needs to be an attempt to pull them together in some sort of structural framework and perhaps reduce the complexity. How

you do that, I guess, is a question, but certainly reduce the complexity and point them towards a strategy and put a structure behind it rather than a whole heap of disparate plans, which is what it looks like at the moment.

The CHAIR: Before I move to Ms Sharpe, there is one small procedural matter that I would like to conclude. Mr Beatty made available to us some documents yesterday, which describes what you have done. Can I ask for them to be formally tabled so we can bring them into evidence? One was an electronic document and the other one was a paper document. I do not mean physically. Is that okay with you?

Mr BEATTY: Yes, that is fine.

Documents tabled.

The Hon. PENNY SHARPE: Thank you very much for taking us out this morning; that was very useful. I need to clarify where you think the dam proposal is up to, because there have been discussions about Needles Gap, Cranky Rock 1, Cranky Rock 2. Councillor Somervaille, can you tell us where that it is up to? The context of my question is about Cliefdon Caves.

Mr SOMERVAILLE: Yes. The study that is going on at the moment, being conducted by WaterNSW through its consultants, is the second phase of the study. The first phase surveyed potential sites for a dam and it was decided that one of the two cranky rock sites was the preferred option. More money was made available. WaterNSW undertook the second stage, which is going on right now. That has largely reopened a lot of what was done in the first stage in the sense that they are going back and looking at other options other than a dam at Cranky Rock. Early in the piece, when the idea of a new dam on the Belubula was first raised a few years ago now, the thought was that the Needles was the ideal site.

The Needles is a site further upstream from Cranky Rock; it has higher elevation. The geography, for an untrained eye, looks like it is ideal for a dam, but, of course, that site has the potential to have the most impact on the caves. That has largely been abandoned now and the focus seems to be on the two Cranky Rock sites. The stage of the process is that WaterNSW have engaged two consultants—GHD to help them on the feasibility, and the Balmoral Group to help them on the cost benefit analysis. That work is going on at the moment. We do not have any particular visibility into that. They are a community reference group. It has had one meeting. Councillor West and I have been fortunate enough to be on that committee—Councillor West representing Centroc and me in my capacity as chairman of Central Tablelands. We have only had one meeting. We hope to have another meeting shortly. At this stage we are not sure about what is happening behind the scenes.

The Hon. PENNY SHARPE: But Cranky Rock 2 is the most likely scenario, in your view?

Mr SOMERVAILLE: In my view, Cranky Rock 2, which is further downstream than Cranky Rock 1. It is at a lower elevation. In my opinion, based on what I have heard and what we heard in the community reference group meetings, the Cranky Rock 2 site has the potential, depending on which configuration—the size of wall and the size of top water level and, therefore, holding capacity—depending on which one you choose, the Cranky Rock 2 site, the downstream site, certainly has the potential to have no or virtually no impact on the caves.

The Hon. PENNY SHARPE: I am interested generally in Centroc's view about the protection of the caves as part of this whole process. Perhaps Councillor West can answer that for me.

Mr WEST: Thank you. I am quite happy to.

The Hon. PENNY SHARPE: I am happy for anyone else to answer it.

Mr WEST: I am quite happy to answer that. Centroc's position, from day one, is that that decision needs to be evidence-based. Centroc, as a regional group of councils, would be very strongly supporting the environment. From a council perspective which is in that area, the local environmental plan already identifies within the heritage component of local environmental plans the importance of the caves, but Centroc, as a group, has said from day one that it needs to be evidence based and if there is any environmental impact on the cave, then it would be quite happy to look for another site and work with those who are making those decisions. It has no desire to impact on the caves whatsoever.

The Hon. PENNY SHARPE: Thank you. I appreciate that. I was interested in the points around connecting all of the different water sources to provide urban water supply today. That was very interesting to me. In relation to the costings for that, is the investigation that is currently being undertaken by the Government taking into account the costings for the network of tunnels, et cetera, that will be required?

Mr SOMERVAILLE: No, it is not. The primary focus, as I understand it, of the current investigation is water storage, principally to supplement irrigation and to regulate and properly manage floods, as we heard

about this morning, and manage irrigation water so that general security water can be made available on a fairly regular basis and irrigators can plan. That is the main focus of it. Any potential benefit in terms of town water supplies all hinges on what happens to Carcoar Dam, which is a side issue from the new dam.

The Hon. PENNY SHARPE: Yes.

Mr BOYD: In support of that comment, the terms of reference largely are around increasing water security generally, and there is a huge difference between that and really securing town water supplies—big difference. I guess our focus is really around how do you secure water supplies to probably over 200,000 people in a genuine, serious and tangible way? That is not really in the terms of reference for that group.

The CHAIR: Would you agree it is a subset of the terms of reference? Surely urban water is equally as important as flood mitigation and/or production supplies?

Mr BOYD: We would argue that it is probably more important. In respect of gross regional product, for argument's sake, if you look at the urban areas, Infrastructure Australia has certainly identified our area as an area which is potentially up to $7 billion worth of gross regional product by the year 2031, and the towns are really underpinning that. Increasing water supply security generally is good, no question, but that is quite different to targeting town water supplies and locking in security of town water supplies.

The CHAIR: Is that document to which you just referred included in any of the documents that have been tabled or is it in any of the submissions?

Ms MACPHERSON: No, it would be supplementary. We have only received it since the August submissions.

The CHAIR: Could we perhaps ask that you provide it to us as part of the supplementary submission?

Ms MACPHERSON: Absolutely.

The CHAIR: Thank you.

The Hon. PENNY SHARPE: These dam sites, as I understand it, have been looked at before and have previously been ruled out, for a range of reasons. Is it simply the rising demand that is getting us to look at them again, or has something particularly changed in technology or otherwise that would mean that these are more viable than they have been in the past?

Mr WEST: We are not certain.

The CHAIR: Nearly running out of water would be a good one, would it not?

Mr BOYD: Perhaps one of the reasons is the actual reduction in liability of the major rivers and I think certainly during the millennium drought that was seen. If you look at the reliability of even just irrigation water in the Lachlan Valley, the liability over of the past, and if you charter it over the past 20 years, it has been dropping back fairly dramatically—through buybacks and a whole range of other things—but I guess if you put irrigators in the bulk of water users, the security of our supplies is dwindling, and that is really what needs to be addressed, because if you cannot rely on your water supply, that becomes a major issue in respect of investment decisions.

Certainly during the millennium drought, as my colleagues mentioned, many towns were on water restrictions, often to protect their industry. The minute you close down an industry, the chances are they are gone; they close down and they go. So we have had many of our towns on restrictions to protect their industry, and that is tangible evidence. For years, businesses would come and say, "This area has been on water restrictions. What guarantee can you give us that that will not happen again?" They cannot make business decisions on inconsistent supplies of water; it is critical.

The Hon. MICK VEITCH: This question flows on—pardon the pun—from the Hon. Penny Sharpe's question. I am referring to the suitability of Carcoar Dam, which was constructed during the millennium drought. We heard this morning that you would have to question the site for Carcoar and its capacity to meet demand. If Cranky Rock 2 goes ahead, what is the future for Carcoar?

Mr SOMERVAILLE: WaterNSW has said in phase one of the study that if a new irrigation dam is built downstream of Carcoar Dam, the dam really becomes redundant for irrigation water. It would therefore be happy to make Carcoar Dam available for town water. It is considering that as a side issue as part of the phase two feasibility study. To follow up on your comment, Carcoar Dam is rarely full. The catchment above Carcoar Dam on the Belubula River is not all that reliable. As an irrigation dam, it is only small in any event; it is 36 gigalitres compared to the 500 gigalitres being talked about for a new dam. It is really quite small. It would be absolutely ideal as a small town water supply dam.

I go back for a moment to the Centroc Water Security Study in 2009. That recommended a new storage high in the Lachlan catchment. The actual proposal was for the augmentation of Lake Rowlands, which is the Central Tablelands town water supply dam, and to build a new dam slightly downstream of Lake Rowlands with a capacity of about 26 gigalitres. Lake Rowlands, or the enlarged Lake Rowlands, would be roughly equivalent to Carcoar Dam. Making Carcoar Dam available for town water, particularly if it is linked with Lake Rowlands, effectively delivers what we were looking for in the Centroc Water Security Study by the augmenting Lake Rowlands. Whether that becomes available or not depends entirely on whether a new irrigation dam goes ahead downstream.

The CHAIR: In the case of the millennium drought, the work that has been done and the proposals that are floating around obviously would or could be funded from local government coffers. So, taking that a bit further, would it not be good to recommend that in its study of an augmented irrigation supply and flood mitigation the State Government look at the interconnectivity and perhaps roll that into, first of all, the economic benefit or otherwise of building the major dam? It would not make any sense to me if it went ahead and built a 500-gigalitre dam that it would not at the same time plan for all the other things that could bring benefits, such as relieving that 36 gigalitres for domestic security. That in itself would then roll into the equation that you talked about earlier; that is, supporting the capacity for expansion in the Central West and in this area.

Mr SOMERVAILLE: Absolutely. Certainly from the information that was made available to the community reference group—and which I believe is now publicly available through the WaterNSW website—it is looking at an option. We say it is not an option in the sense that it is not an alternative. It is looking at a potential linkage of Lake Rowlands and Carcoar Dam.

The CHAIR: It is doing that, is it?

Mr SOMERVAILLE: And potentially increasing the combined storage of the two of them by providing additional storage at Lake Rowlands. That is being looked at, I think, but it is not anywhere near an alternative to a new irrigation dam.

The CHAIR: Mr Styles, do you wish to add something?

Mr STYLES: Trying to resolve the drought-proofing of the urban supply within the options under consideration with regard to the Cranky Rock No. 2 dam is essential. While Carcoar Dam does not fill very well, the strategy we have is to use the multisource options to store it when it is plentiful to inject the storage into it. It is also fairly relevant that the separation of the urban drought-proofing supply, if you can cause it to happen, is a very effective way of providing the competence that Mr Boyd spoke about for our towns going forward. The option there is fairly central to the growth in prosperity that was the subject of the first question. The key thing is that the time when the drought-proofing storage is required is the same time when typically rivers are dry and we lose three and four times what we need when we try to transfer it. The idea of high security in a general purpose dam can be a bit misleading, because when we need it and we have to transfer it down the channel, we lose a lot of it.

The CHAIR: Councillor West, do you want to add something?

Mr WEST: I want to follow up on that comment. The answer in simple terms is yes

The CHAIR: Great.

Mr WEST: I am sure that Centroc will be able to provide some sort of supplementary information that gives the Committee an answer in some form to that question.

The CHAIR: Thank you very much.

Mr SCOT MacDONALD: I refer to the Cranky Rock No. 2 Dam. We are talking about security, not extra water, are we? It will not add to the quantum of water. You are addressing reliability.

Mr WEST: My understanding is that the licences are out there and restricted. So it will provide a dam that will store water, which will then provide greater certainty for urban areas, agriculture and industry. It is as simple as that.

Mr SCOT MacDONALD: But it does not add to the total, whether it be general or high. It would not be extra consumptive water or dam water?

Mr BOYD: No. Our understanding is, as Councillor West indicated, that it does not. It really hopefully increases the security of water. Where they might have got full allocation every 10 years, it might be every 11 years or something. It actually just increases the likelihood that they will get a larger component of their licence.

Mr SCOT MacDONALD: Following on from that, I refer to the mining question. You are talking about a new miner having to acquire someone else's licence; they would have to go into the market and acquire a licence. However, if the dam its built, presumably it would be more secure. Is that the point?

Mr WEST: That is the presumption. If the Government is the owner of the dam, and if it wanted to come to another arrangement, that would be for it to decide. Our understanding is that that is how it would work.

Mr SCOT MacDONALD: You mentioned a consultant doing a cost-benefit analysis. Are we going to land on a cost per megalitre for the usage charge and the fixed charges? We have come from Tamworth, where there are very high charges; roughly 10 times the charges in the southern basin. At what point does the consultant say, "This is likely to be $40 a megalitre, $20 a megalitre, or $60 a megalitre in annual charges"?

Mr SOMERVAILLE: I do not think that is part of their brief. They call what they are doing a "willingness to pay study". They are surveying the users to get answers to the question, "What would you be prepared to pay?"

Mr SCOT MacDONALD: Given the security.

Mr SOMERVAILLE: Yes. What would they be prepared to pay under these different scenarios in terms of security?

Mr SCOT MacDONALD: If there were greater security, they might be prepared to pay more and so on.

Mr SOMERVAILLE: Yes.

Mr WEST: Yes.

Mr SCOT MacDONALD: One of my concerns is that we do not end up with $40, $50 or $60 a megalitre. That might look alright if it is a bit more secure, but then we run into the problem of not being competitive with other valleys.

Mr SOMERVAILLE: I think that is where the willingness to pay comes into it.

Mr WEST: We have not seen those figures or any indication of what they might be in terms of who will fund it and who will pay recurrent expenditure. In terms of the Peel and Tamworth areas, from our perspective we are shoring up urban water supplies. We are talking about getting water for people to drink and for industry to work with.

Mr SCOT MacDONALD: Those consumptive users will be impacted; presumably they will be facing a new pricing regime.

Mr WEST: Someone will have to pay at the end of the day. Of course, they will.

Ms MACPHERSON: My understanding is that the willingness to pay study is not looking at induced demand. For example, if there is a new mine somewhere that might start because of added security, that is not taken into account through this study being done at the moment.

Mr SCOT MacDONALD: So you will look very closely at this cost-benefit analysis?

Mr WEST: Yes.

The Hon. RICK COLLESS: You talk about a network of connectivity between existing storages. How is that going to work in practice—as part of the Orange to Blayney pipeline going in? Is the incentive to have all the smaller centres connected to pipe water?

Mr BEATTY: I could probably answer that: The answer is yes.

Mr WEST: We could all probably answer that.

Mr BEATTY: Along the way you have Spring Hill and there will be a connection to the airport as well. Spring Hill, Millthorpe, Blayney—all those townships will be connected.

The Hon. RICK COLLESS: Would adjoining landholders along those pipelines have access to that supply?

Mr BEATTY: The intention is not to have individual landholders connected.

Mr WEST: I can answer that on an area that you are familiar with. There is a connection between Central Tablelands Water and Blayney from Cowra. Cowra provides water through its system down to Kurrawatha and the villagers in the Young shire and Weddin shire. Those pipelines are already in some respects there, and the plan is to continue to look at that as we work with other villages and communities in the Centroc landscape.

Mr SOMERVAILLE: If I can clarify that this is not an operational pipeline for day-to-day use. This is a pipeline for emergency or standby use if there is a major catastrophe or breakdown in a water treatment plant or a severe drought in one or other of the water supply systems.

The Hon. RICK COLLESS: So those small communities that have a water supply of sorts now, some of it perhaps not as sustainable as we would like, would use this water to overcome those emergency situations rather than supply day-to-day water?

Mr WEST: Some yes, some no. It depends on the circumstances, what it is designed for and constructed for.

The Hon. MICK VEITCH: You talked about the supply to Koorawatha. I know the Young supply comes out the Murrumbidgee via Golden Fields, at Monteagle or thereabouts. There are not many kilometres between the two. Has any work been done on connecting the two supplies, which would mean we would have reliability across the valley.

Mr WEST: Yes, there has been some preliminary discussion about that. One of the issues that would have to be addressed is the size of the pipes and the capacity of the pipes to deliver sufficient water. However, that discussion is taking place, particularly helping to drought proof small communities.

Mr STYLES: The Centroc proposal does include a large network between towns and villages with storage high in the catchment that allows transfer either way to do the drought-proofing job. The towns have their supplies; other villages will be picked up on the way, like Spring Hill that does not have that sort of supply in this project. The purpose of storage and interconnectivity is to provide that extra resource during times of need. That will effectively drought proof in terms of the current standards of town water supply, so having the network proposal going to different places just to do that.

Ms MACPHERSON: It also enables inter-catchment transfer between the Macquarie and the Lachlan, which will be pretty significant. I do not think we have done that.

The Hon. RICK COLLESS: With the Cranky Rock proposal, if it goes ahead, will that impact on the security of town water or is it purely for irrigation water?

Mr SOMERVAILLE: It is principally for irrigation security, but the aspect that is relevant to town water, which we are vitally interested in, is what happens to Carcoar Dam. That is the side issue, not the principal focus of what the Government is looking at. The new Cranky Rock dam potentially does have a very important benefit in terms of town water supplies, but only through that connection.

The Hon. RICK COLLESS: Is the proposal that Carcoar Dam would be transferred to Central Tablelands Water, the ownership and management et cetera?

Mr SOMERVAILLE: We have not got anywhere near that stage yet.

The Hon. RICK COLLESS: But the water would be available for Central Tablelands Water.

Mr SOMERVAILLE: The water would be available for town water in some fashion, yes.

Mr WEST: Our support for Cranky Rock is predicated on access to that water, because our concern is that the Centroc Water Security Study very clearly identified that there is going to be a water security issue across the region in the future. We are looking to shore that up.

The Hon. RICK COLLESS: You refer a lot in your submissions to the need for another dam high in that the Lachlan catchment. Can you see any other options if Cranky Rock and the Needles are knocked out of the argument? Is that where the story ends?

Mr SOMERVAILLE: It is not up to Centroc to advocate one particular solution, other than there should be dams. But because we participate in the community reference group, we are aware that they are looking at other options. Just how much strength there is behind these, we do not know, but raising the dam wall at Wyangala would generate additional storage, quite a considerable amount of additional storage. They are looking at a new dam on the Abercrombie River, upstream of Wyangala, and there are various other smaller

scale options being looked at including non-build options further down the river. Cranky Rock is not the only thing that they are looking at, but our understanding is that is the one they are mostly focused on.

Mr BOYD: Cranky Rock and the State's proposal is quite a large proposal. If we took it back to what the Centroc study was around, it was just looking after the town water supplies. This is about building a dam in the catchment, but probably of a size commensurate with the needs of a town water supply. It could be another option, but it has been surpassed by the State having a larger view, which is good. Our option was originally to upgrade Lake Rollins, but that has been surpassed by these larger scale options, which would have a much more tangible impact across the whole catchment. We are quite supportive of the next level of thinking.

The Hon. RICK COLLESS: If the larger proposal went ahead, would there still be the need for Central Tablelands Water to upgrade Lake Rollins?

Mr SOMERVAILLE: Not necessarily for the existing demand, but we are looking at trying to increase the available water to satisfy town water supplies to those towns that are linked or potentially linked to the Central Tablelands Water network and to make available additional water for growth generally. It is not just for town water supplies but for commerce and industry, which are part of those towns. It is pretty important, but we have not talked about what we would to augment that. It is a possibility, but the funding is always a problem.

Mr BOYD: It probably goes back to the Chair's suggestion that Carcoar or another be looked at in the terms of reference.

The CHAIR: Within the terms of reference?

Mr BOYD: It is really contingent upon what happens with that. We are very supportive of that approach.

The CHAIR: When we talk to the government agencies we might raise similar questions and see what their response is, because it would be stupid to proceed leaving some of the synergistic options off the table.

The Hon. RICK COLLESS: I want to ask about translucent flows. In the lower Lachlan that problem has been raised a number of times. Where there is a translucent flow, particularly when it comes in the dam, that is essentially an environmental flow because irrigators are not allowed to touch it. They still maintain environmental water in the dam, and if that continues over a long period it is possible to end up with nothing in the dam but environmental water. Do you have any views on the management of translucent flows and how they should be handled?

Mr MEDCALF: What we have been concentrating on is probably further up the Lachlan. When we get down towards Forbes and Condobolin that is the thing that worries people most of all, because a lot of water goes past, which is environmental flow, and we cannot access it in any way. On the lower Lachlan, we rely more on the aquifers than we do on the flow of water down the river.

The Hon. RICK COLLESS: The further you go down the Lachlan, the more pronounced that becomes.

Mr MEDCALF: That is right. We are talking about the aquifers and the demand that the lower part has. That is what is going to restrict us on our development and more secure water for some of these towns around that area. Because they are going to rely on them they want the back-up of an aquifer. They cannot use the river water because of environmental flows. Therefore we do not have security of water for some of those towns in the long run. In my council—we talk about individuals and that sort of thing—the management of environmental flow is always brought up, especially by the people from Lake Cargelligo. We feel that we are being done because it is not managed enough to allow us to do what we want to do down river—especially from an irrigation point of view.

The CHAIR: As I said earlier, the Committee was given the benefit of having a look at the Orange stormwater reclamation project. Does Centroc, as a group, have a view on whether that is likely or capable, or should be repeated in other jurisdictions within the Centroc group? In other words, has there been any work done on looking at other sites that may well be able to be treated in a similar fashion?

Mr STYLES: Being from Orange, I will take the first part of that question. The stormwater harvesting has proven to be a very cost effective solution to increasing the water supply. We are channelling up to 30 per cent into our total supply of that reclaimed water. It requires quite a bit of infrastructure on the treatment side in terms of the treatment plant. In my view, it is one of the low-hanging fruit options that is available elsewhere. But it should only be viewed through the lens of being part of a range of options.

The CHAIR: Correct. That is what you alluded to earlier. All of these water considerations are multi-pronged.

Mr STYLES: It is a very effective part of it. During the millennium drought it kept us going.

The CHAIR: Given that, I will repeat that question. Has Centroc got any plans to look at that for other LGAs within the Centroc group?

Mr BOYD: It is a very viable option for towns, particularly towns that are remote from water sources—Orange and Parkes. Most towns are right on water sources. Where the water discharges directly to the river, similarly you draw water out of the river, treat the water and return it to the river. It may not be viable necessarily. As with nearly everything we do in water supply networks, we look at costs versus benefit. Where it makes sense to do it we would certainly do it. We are advocates of the best suite of projects for a particular town. This is where the integrated water cycle management plans, which everyone has now done, try and pick up on that suite to make sure that there are several options and to make sure that there is security.

Stormwater harvesting will work in some places. It will not be viable in others because there are better sources. It is very much a horses for courses situation, but I think some of the work that Orange has done has proven that it is very viable. It was always seen as a highly contaminated, really problematic water source. Orange has done some seminal work that has proven that that is not necessarily the case, and really opened a lot of doors to doing that. With respect to recycled water, it is a very complex issue to try to use that. That is another area that may warrant looking at. The reuse water guidelines contemplated that.

The CHAIR: Okay. I was just interested in Centroc's views on it. This may not be true for the whole committee, but to me that is a super-micro trial plant for what I think we could do elsewhere on a much bigger scale.

Mr SOMERVAILLE: I think it is fair to say that there is no Centroc region-wide policy in relation to stormwater harvesting, but because we have our Centroc Water Utilities Alliance, where all the operators and the managers of the water utilities in each of our member councils get together and exchange best practice and do training, that is where the benefits of Orange's experience in relation to stormwater harvesting might well be available to those other members of the Water Utilities Alliance who might be able to make use of it, depending on their own individual circumstances in their own areas.

The CHAIR: From my observation it is not just the engineering or the hydrology probabilities; it is the fact that the Orange project went to NSW Civil and Administrative Tribunal [NCAT] and fought its way through the approval process. The first project was a bit more difficult. The second project seems to have gone through in a snap. Obviously lessons have been learned, not just in the engineering, or the way to do it, or in the commercial viability, but in adapting the project as a result of feedback received from the community. There may still be downstream users that were not happy with the way things went but the whole suite of that is surely very valuable for water authorities, no matter who they are, as a case study. I am not just talking about whether it applies to Forbes or Parkes or somewhere else and saying, "Okay, it is not going to happen."

Mr WEST: I think the councils in Centroc are acutely aware of the importance of the precious resource of water and we manage it based on the needs of an area, looking at and sharing the ideas and experiences of Orange and of other areas so that we get what is most appropriate for a particular area. That is standard practice across Centroc.

The CHAIR: Thank you; that is good.

Ms MACPHERSON: I would like to make a comment which ties a few things together that we have been talking about in relation to the discussions that Mr Boyd raised earlier around the regional water planning and also the options being posed through the WaterNSW study and the Integrated Water Cycle Management discussion. All of these plans that the councils do themselves and the experience that we have had with the water security study and the infrastructure development that has been done over recent years to shore up the distribution of the little water that we have mean that this region is pretty well acquainted with our region. For that reasons we have been advocating very strongly that we want a seat at the table when there is talk about regional water planning.

We do not want to see the local knowledge of the local councils in relation to local communities—the knowledge of the gentlemen around this table—ignored. They know what is going on and they are very well placed to be able to provide input into this regional water planning process. Even in the design of that process we would like to see engagement with local government. I think it is fair to say that we are not seeing a lot of that at the moment, and we are very keen to be at the table when discussions take place about what a regional water plan will look like, and what is thought about when one is created.

The Hon. PAUL GREEN: This leads into why it is so important to do that—the cost-benefit structure that Mr MacDonald was talking about. Whatever the methodology is, one thing that it is not going to take on

board—which, as you say, you all have in common—is the heart for sustainable growth and water security. If you do not have that you are already at a competitive loss to other regions that are bidding for the same businesses and industries as you are. You are right, you generally need people at the table who know your area and who are fighting for water security for your area. I can tell you, we down in the Shoalhaven are fighting for it. Wagga Wagga is fighting for it. Tamworth is fighting for it. It is very important that you are part of that discussion so that we can share the opportunities right across regional New South Wales.

Mr WEST: I think we, as a region, would have some scepticism about the merits of cost-benefit ratios in terms of infrastructure in regional areas as a methodology of determining what should happen, because we do not look into the future; we are only measuring what we already know. We look at what has happened in the past and speculate about the future. It does not allow for that growth asset that you are referring to.

The Hon. PAUL GREEN: The social and economic capital.

Mr WEST: So we have a real worry about that sort of methodology in rural and regional areas. It is an impediment to our growth.

The Hon. RICK COLLESS: I think that has changed.

Mr WEST: I think there has been change. I acknowledge that there has been significant and welcome change but in some people's minds there is a notion that they have to go down that path.

The CHAIR: Hence the significance of the sorts of forecasts that are going to be tabled. That sort of documentation—that sort of Nostradamus stuff—is very important. As human beings we have never made great leaps without great leaps of the mind, first. You have to think about what the next 50 years is going to be like for this region of New South Wales. It is no good thinking about tomorrow; you have to think about 20 or 30 years ahead. Perhaps this inquiry is 20 or 30 years too late, but, anyway, we are here.

The Hon. PAUL GREEN: It goes without saying. It is a no-brainer: If there is no water, there is no growth. Ms Macpherson, could you perhaps suggest to us what a recommendation would look like to encompass that last bit of information you mentioned?

Ms MACPHERSON: That local government is involved or engaged with the State Government in the co-design of planning processes and the plans themselves for regional water planning.

The CHAIR: That will make a sound recommendation—number two, I think. In fact, if you think about it, if in 50 years time there is a mega-project that is being developed in which we are using desal or water out of somewhere to augment our systems, it is the end terminal systems that count. It is no good pumping a million gigalitres over the iron curtain to the interior of this State or even the eastern seaboard if the infrastructure and the plans are not in place to be able to use that—to squeeze every ounce of production and growth out of regional New South Wales. Those of you who have the misfortune of having to visit it from time to time will notice that every time you go to Sydney—and it might be only two weeks after the last time you were there—is just bursting. We cannot grow New South Wales by growing Sydney, despite the stamp duty revenues that it is produces. This is where the action is going to be in the next 50 years and everybody needs to come to recognise that.

The Hon. MICK VEITCH: When this inquiry held a hearing in Deniliquin we heard about very poor post-flood consultation with the communities by the authorities down there. Their criticism was essentially around the lessons that could have been learnt so we do not replicate the mistakes from previous flood events. Councillor West and Councillor Medcalf, what has that post-flood consultation been like after the most recent floods in this part of the State?

Mr MEDCALF: There might be 20 years between floods. This last one was really unprecedented in the way it happened. The way we map a flood or look at a flood now is completely different because of the technology and that sort of thing that we have to do it. If you look down at the lower Lachlan towards Condobolin with Lake Cowal and that sort of thing, we had water coming in there where we have never seen water come from before, which extended the flood that much further. We talked earlier about environmental flows. That is the biggest environmental flow you will ever get. Then we will go through a millennium drought and that sort of thing and then we will get the water that does not even run down the Lachlan.

The CHAIR: Not one litre was counted—I guarantee you that—as an environmental flow.

Mr MEDCALF: That is another issue when it comes to mapping—finding out where all this water is coming from and what effect it is having on people. That was one of the sad things of this flood. We were lucky enough to see a production year through our area which was pretty well unprecedented but the people that were flooded got nothing. It could just have crossed the fence. He lost everything and the bloke next to him had the

best production he has ever had. This is the sort of thing we have to take into account in how we regulate and how we look after these people to make the best production out of one of these events. I find it very difficult to talk about the water and how important it is to make life go on. We just get a one-off every now and again, which makes it very difficult.

Mr WEST: You are probably best to ask Forbes or the particular areas who were devastated and had a significant impact on them by the floods. Cowra, for example, was reasonably unscathed but I do not believe there has been any great consultation back with the council and certainly not with Centroc in terms of the issues that arose. One issue that has arisen—and Councillor Medcalf made the comment about "across the fence"—is that some of the subsidies and financial assistance that is made available is made available on a shire-wide basis. There were people in the Cowra shire who were not able to access that because it was not considered to have had a large enough impact on the shire, yet five kilometres downstream in Forbes they were able to access that money.

Fifteen thousand dollars is probably not going to break the bank but it would have been a very nice little hand up for some people, so there is an issue in terms of how that is potentially managed. Some people were very unhappy with that on the Belubula River. Because it was in the Cowra shire they were not able to access that sort of money either. If your question is predicated around whether there was any great consultation after the flood, I would think very little.

The Hon. PENNY SHARPE: My question is to Mr Styles. There is another submission we have received that talks about the impact of the airport on a potential aquifer recharge area. Could you talk through that?

Mr STYLES: Currently we have a rezoning around the airport that in some areas is not supported by some people. The rezoning has made it through the gateway and is on exhibition. As part of that exhibition, people have put in submissions. Those people who are against it have highlighted the height of the water table there, the importance of the water table and the risk of contamination. We are about to take a report forward that deals with that amongst the other objections. We believe that we can deal with that effectively. The matter of the determination of that rezoning will be for the State Government. Our process is to deal with it to the extent of our powers, but the determining authority will be the State Government. We will get to weigh up those issues but from Orange City Council's perspective we believe we can deal with that very effectively.

The Hon. RICK COLLESS: What was the nature of that rezoning, Mr Styles?

Mr STYLES: It is to provide employment in and around the airport.

The Hon. RICK COLLESS: Council owns a lot of that land themselves.

Mr STYLES: Yes, we do. Regional airports have an ongoing challenge in the future. This is why the industrial land is important to us.

The Hon. RICK COLLESS: So it is for industrial land?

Mr STYLES: It is a mix of employment land and industrial land—the light industrial side of industrial land. But in terms of growth of our area, our track record in doing stormwater harvesting, which deals with a lot of the concerns, we believe we can very clearly demonstrate the matter can be dealt with easily.

The CHAIR: Ladies and gentlemen, thank you very much for your help here today. As you are probably well aware, inquiries like this need to put forward recommendations and potential solutions, not just problems. The data that you provided to us in your submission and the data that I am sure you will be providing to us in supplementary submissions will be critical to us forming recommendations—and some of them may be blue sky—that the Government can at least be expected to think about. That is what it is all about. Once again, thank you very much for your hospitality and for demonstrating to us some of the things that you have done. That is not a small stormwater reclamation project you have out there. As I said, it is just a "little, tiny" pilot. It is great. Thank you very much for appearing.

Mr MEDCALF: Thank you very much for the opportunity to be at the table. As was said on the radio this morning, I hope it is not a talkfest.

The CHAIR: Well, so do I.

(The witnesses withdrew)

IAN CURTIS, President, Orange Speleological Society, affirmed and examined

HARRISON DAVID BURKITT, Secretary, Save Cliefden Saves Association, affirmed and examined

ANNE JANE PAUL, Project Manager, Daroo Orange Urban Landcare Group, sworn and examined

CYRIL SMITH, Coordinator, Orange and Region Water Security Alliance, affirmed and examined

The CHAIR: I call the hearing to order. I acknowledge that we have submissions from the Daroo Orange Urban Landcare, submission No. 39, Orange Speleological Society, submission No. 73; Orange and Region Water Security Alliance, submission No. 83; and save Cliefden Caves, submission No. 77. You are appearing in a panel, so I will ask if you would like to make a joint opening statement or if each of you would like to make a brief opening statement?

Mr SMITH: I think each of us would probably make a statement.

The CHAIR: In that case, I will start with Ms Paul. Would you like to make an opening statement?

Ms PAUL: Yes, sir. My name is Jane Paul. I am appearing on behalf of Daroo Orange Urban Landcare Group, who are presently caring for the ecologically endangered community on Crown land in Orange. Our main concerns are the ecology of the river, downstream users of the entire system, and the important Lachlan River wetlands. Damming at either of the selected sites will have a serious effect on the relatively intact riparian forest dominated by Casuarina cunninghamiana, which is a River Oak, seriously impacting fauna species—platypus, water rat, frogs and birds such as the golden whistler—that utilise the forest, and on the ecologically endangered community of white box, Blakely's red gum grassy woodland at Burnt Yards. Downstream users are all from the Belubula River downstream of Carcoar Darn, part of the Lachlan River endangered ecological community under the Fisheries Management Act.

A dam will reduce downstream flows, further degrade in stream processes, and have a serious effect on native fish, including listed threatened species. Any changes to water management must support factors such as no loss of native species. Additional information is required to assess other impacts such as thermal pollution, algal blooms and water quality issues. Important Lachlan River wetlands include the Booligal Wetlands and the Great Cumbung Swamp, and neither of these are Ramsar listed—I made a mistake earlier—where migratory bird agreements are in place to protect waterbirds such as great egret and glossy ibis. High natural flows from tributary inflows of Belubula River and others, coupled with environmental watering events, result in significant natural flooding, triggering massive waterbird breeding and invigorating the vital wetland vegetation. As well, there are two key threatening processes associated with the dam construction proposal which must be taken into account.

The CHAIR: Thank you. Mr Smith, would you like to make an opening statement?

Mr SMITH: Yes, thank you. Today I am appearing for the Orange and Region Water Security Alliance. It was formed with regard to the Macquarie River to Orange Pipeline. The alliance has been revised, but it continues to be involved in water issues for our community. The alliance supports the Murray-Darling Basin Plan. The alliance will not be an advocate of a dam on the Belubula River as water security in the region extends beyond this option. The alliance will review the Lachlan Valley Water Security feasibility study when it becomes available. The alliance is interested in the Murray-Darling Basin Plan review, the production of the water resources plans, the extension of stormwater harvesting by councils, protecting aquifers from contamination and/or destruction—keeping in mind they are the largest water storage structures—particularly in our local area, as indicated around significant airport development, supporting worthy projects obtained by a reliable, and efficient approval process.

We would like to achieve the best possible spend of State funds on water projects and investigate the possible use of the Macquarie River to Orange Pipeline. The main disruptor for the water management in Orange is the Cadia goldmine and will continue to be in the future. The Orange community pays additional water and sewer rates due to its influence. My key recommendation to this inquiry would be that the alliance would recommend that any future development of some importance require a peer review before public exhibition. This would apply to the Lachlan Valley Water Security feasibility study.

Mr CURTIS: The Orange Speleological Society, and with the consent of landowners, regulates entry to these caves. The society is a founding member of the New South Wales Speleo Council and the Australian Speleological Federation. Cliefden is the largest and most significant cave system west of the Great Dividing Range. It is the most significant cave system outside the national park estate in New South Wales. The limestone has been known since 1815. The Water Security for the Regions scoping study states:

> There is some uncertainty around the environmental, recreational and scientific value of the Cliefden Caves as their existence has not been well-known ...

The caves are well known, nationally and internationally. More than 50 scientific papers have been written on the karst and caves. Two studies are currently in progress—a bat study and a speleogenesis study—the results of which will be presented at the International Union of Speleology Conference—Australia's first international hosting—at Penrith Panthers this July. In the as yet unpublished research paper, there is the suggestion that because of the rapid drops in water level after water events there is likely to be open passage below river level.

Cliefden is a host area for international conference attendees. How significant is Cliefden? Scientists say that the fossils are world class. The caves have been on the Register of the National Estate, and they are considered of significant value by Blayney and Cowra Councils. The Office of Environment and Heritage considers the caves have "the highest number of international values of any cave area outside the national parks estate in New South Wales" It scores the caves five out of five and gives the next grading two out of five. Wine drinkers unknowingly know the area. Angullong Wine has two reds: a Taplow Maze, which is one of our caves; and Fossil Hill. On 2 May this year Australia Post issued a Cliefden Caves stamp.

So, what specifically are we in danger of losing? We could lose highly decorated cave systems; possibly the caves themselves—once flooded they will be silted up and destroyed; a world-renowned fossil site; a hot spring—one of only three on limestone in New South Wales; an important scientific and educational site; a vulnerable bat species, bat maternity site, and a bat hotspot; Tufa dams; an important cultural heritage site—indigenous; early colonial and local; large areas of productive river flat on several properties; and a significant area of remnant riparian vegetation and a wildlife corridor. In conclusion, there is no uncertainty about the environmental and scientific values of Cliefden caves. The Central West is most fortunate in that it has mega fauna at Wellington, Silurian fish at Canowindra, and Ordovician fossils and much more. If we degrade this site, the future scientific world will judge us.

Mr BURKITT: On behalf of my organisation, the Save Cliefden Caves Association, and the more than 15,000 people who support our organisation's aims, I thank the Committee for having me to give evidence to this inquiry today. I acknowledge the traditional owners of this land, the Wiradjuri people, who have called this area, including Cliefden Caves, home for tens of thousands of years. I also pay my respects to their elders past and present. The Save Cliefden Caves Association is a public movement to protect Cliefden Caves from any proposed dams on the Belubula River. The association opposes dams that will impact the Cliefden landscape, in particular the caves, fossils, thermal springs and associated environments. We apply a cautionary principle to any water impoundment proposal in the Belubula River valley. It is important to note that both of the Cranky Rock Dam proposals put forward by WaterNSW in its initial desktop study will impact Cliefden Caves landscape.

I will touch on the groundswell of support from national and international groups for the campaign to protect Cliefden Caves. The fact that these groups have joined us—such as the European Association for Conservation and Geological Heritage, the Bat World Sanctuary, the Australian Speleological Federation and the New South Wales Nature Conservation Council—highlights that many groups across the State and the world see this site as internationally significant and believe that it is vital that it be protected. As I said, we have more than 15,000 supporters have joined the campaign, 1,000 of whom of come from the Central West. Importantly, we see our role as a conduit for on connecting groups and individuals with each other who support the campaign. People are opposed to the dam for a number of reasons, be it the protection of caves, the poor hydrological setting, the riverine conservation issues, or the lack of an economic benefits likely as a result of the dam. The establishment of the Belubula River Alliance exemplifies this.

We see it as important to note that these dam proposals have been put forward since the 1930s—I think the first report was issued in 1931. We are concerned, as were those reports, about the geological setting of the dams, both at Needles Gap and Cranky Rock, not only because of the caves but also the associated geology, which involves faults and obviously leaking through karst fissures, an engineering problems associated with a new dam in this geological landscape.

The CHAIR: Thank you. At the conclusion of your evidence, we would like to take copies of your opening statements to assist Hansard with the record. We are concerned, as were these reports, about the geological setting of many of these dams, both Needles Gap and Cranky Rock, not only because of the caves but because of the associated geology which involves faults, obviously leaking through fissures and engineering problems associated with the new dam in this geological landscape.

The Hon. RICK COLLESS: Thank you for coming here today. Ms Paul, the submission from the Daroo Orange Urban Landcare Group says:

> We believe such a dam built at the Cranky Rock site the water level at Needles Gap would be raised by up to 50 metres, i.e. more than 380m. ASL, inevitably flooding Cliefden Caves.

What is the threshold level for the Cliefden Caves to become flooded? At what level of water inundation does that occur?

Ms PAUL: I do not actually know that but I know it is available and I would like to take the question on notice.

The CHAIR: That would be great, thank you.

The Hon. RICK COLLESS: Perhaps one of the other witnesses would be able to answer that.

Mr BURKITT: I can assist you with that. There is a problem with the premise of the question. I accept that it is the obvious question to ask, and it is the question I have asked many times. We can talk about the impact on known caves or fossils or heights. Geological processes do not always occur at those heights, and water tables that affect the formation of the caves occur well beneath the surface. There have been heights suggested about what would affect the caves, but really there has to be proper scientific research to show how the heights of the surface level of a dam would affect the landscape. A height of 380 metres has been discussed, but my organisation is not committed to that height—so if you are below it, you are fine; if you are above it, that is not alright. We just do not understand the processes yet.

The CHAIR: Do any other witnesses have an opinion on that?

Mr CURTIS: Yes, I will add to that. The lowest height of a cave, at about 390 metres, water starts to enter the cave system. If we go down to the hot spring, it is maybe 1½ metres lower, although it is further down the valley. The cavers believe that the river level is basically the bottom of the caves, but we believe that underneath that there is siltation. All cavers, when they are crawling around in the mud at the bottom of caves, believe that is where it goes. Evidence seems to suggest that these caves actually continue down. That makes sense if you look at Cliefden itself, where you can see that there are two sources of water. There is water coming from under the ground, which gives us a hot spring, and there is the water of the river coming down through the valley. There are two sources of water in there, and the difficulty is knowing how deep you go under that before the water starts. Mr Burkitt said to possibly 380 metres, but I do not know. I think the hole still goes down under the river level.

The Hon. RICK COLLESS: The lowest known entry to the caves is 390 metres, did you say?

Mr CURTIS: Just under 390, yes.

The Hon. RICK COLLESS: Surely the concerns that you are expressing would be addressed as part of any extensive geotechnical research done before any dam is built in Australia?

Mr CURTIS: I would argue with almost a political answer. Carcoar Dam seems to me to be built in the wrong place from what I have been listening to today. It seems that this dam, we have been told it will be at Cranky Rock, but listening to the Centroc gentlemen, they suggested it could be in certain other places around here. I hear different heights; every time I listened I hear something different. I heard 500 metres today, Mr Cobb talked about 900 megalitres of water. To me there are tremendous number of questions about where, how high, whatever. You are right in the sense that in the 1930s and 1940s the government geologist rejected the site because of unstable groundwork. I do not know if technology today could sort out that problem.

The CHAIR: Mr Smith, do you want to add something?

Mr SMITH: Just a point of clarification. Mr Curtis talked about metres and megalitres, when he should have been talking about gigalitres.

The Hon. RICK COLLESS: Mr Curtis, you said that Carcoar was built in the wrong spot. Are there large known caves in that vicinity as well?

Mr CURTIS: No, I do not think so. The evidence that I would use for that is that it seems traditionally to be almost empty—

The Hon. RICK COLLESS: Yes, that is a catchment issue.

Mr CURTIS: It seems traditionally to be filled with blue-green algae. Last year was an exceptionally wet spring, and it took right until the end of spring until the dam filled.

The Hon. PENNY SHARPE: I think some of you were here for the evidence given by Centroc. They indicated that they have had advice that some people believe that the 500-gigalitre proposal for Cranky Rock would be acceptable. Do you reject this or do you want to comment about it?

Mr CURTIS: I have not actually thought about 500. I have always said either the original or 900 or 700.

The CHAIR: We are talking about capacity, gigalitres.

The Hon. PENNY SHARPE: Yes, I am talking about the size of the dam. This is going to have to be examined through an environmental impact statement process. I want to clarify that it is not your view that at this point you can make that determination.

Mr BURKITT: I have the dam capacity and height tables on my computer. The onus is on the New South Wales Government to demonstrate to us that its terms are not going to affect the caves, be that a 500-gigalitre proposal or an up to 1,000-gigalitre proposal, which has been talked about for Cranky Rock. I am happy to take the question on notice and get back to you about the specifics.

The Hon. PENNY SHARPE: That would be great. It is important.

Mr BURKITT: Yes, it is very important.

The Hon. PENNY SHARPE: Mr Curtis, I wonder if you could expand to the Committee, on any of the issues that you believe were raised previously in relation to dam proposals that have been examined before. You talked a little bit about the issues—it was rejected because of the geology and how the opponents' submission talks about the bedrock. Could you expand?

Mr CURTIS: The articles that I have read are the ones that have been published. They have examined the Cranky Rock sites and the Needles Gap Dam site. There were problems with the type of rock there. I think they suspect now that there might be problems, also, with slippage as a result of the weight of water from a heavy dam.

Mr BURKITT: I can add to that answer. I should point out that I am not a qualified geologist. I am a student of geology but I am not a geologist. There are major thrust faults running through the area associated with the Lachlan fault belt.

The CHAIR: Could you repeat the last term?

Mr BURKITT: A thrust fault is a particular type of fault.

The CHAIR: You said it was running through something.

Mr BURKITT: The Lachlan fault belt is the geological region that we are in.

The CHAIR: I just want to make sure that Hansard gets it down; otherwise your evidence turns out as gibberish, and we do not want that.

Mr BURKITT: It has been known to be active. When you put a substantial weight of water on top of that fault, one can only guess what could happen. There have been examples overseas—I have the examples here—of this sort of thing happening, especially in kast regions where there are aquifers leaking and lubrication of the fault. I am not an expert but that could possibly lead to increased seismic activity.

The Hon. PENNY SHARPE: Ms Paul, can you expand a little more on your concerns about the impact on wetlands as a result of the damming of the river.

The CHAIR: The impact on wetlands.

Ms PAUL: Yes. The flows that come from the Carcoar Dam down through the Belubula, if they can meet up with environmental flows that are released through the basin water plan, they can, by their very nature, mean that the Cowra Dam can be withheld and the Belubula flows can go before that, which will create a much vaster area of wetland that will be flooded. Those areas do not get all that, and that is why that basin is highly—sorry, I cannot think of the word. That vegetation had been in very dire straits before this last, huge flooding, which covered than a lot more than 200,000 hectares, I think—another one was 99,000 hectares—because they get that extra free water from below the Carcoar Dam that comes down the Belubula and joins the Lachlan near Gooloogong. So you get extra, which makes it more natural—similar to how it used to be before the Lachlan River was highly regulated.

So another dam on the Belubula will change the amount of flow that will continue on down into the Lachlan. Besides, that advantages everyone along that lower part of the Belubula—that is below the Carcoar Dam—because of the extra flooding flows that go out into the landscape and then come back into the river. That way they fill all the aquifers along the alluvial flood plains. Consequently, you have better hydration throughout the entire system. Is that answering your question, or have a missed a few bits?

The Hon. PENNY SHARPE: No, that is fine.

Ms PAUL: I can add some more.

The Hon. PENNY SHARPE: If you want to provide more information to the Committee on the impact of the dams I am very interested in that. So if you go away from here and think, "We have a great paper on that," or you know of a study, please share it with us.

Ms PAUL: I have a lot of information. I have asked if I can put in a supplementary submission.

The Hon. PENNY SHARPE: You can.

The CHAIR: Absolutely. The answer to that one is: yes, please.

Ms PAUL: Thank you. That would be great because I have a lot of information on that.

The Hon. PENNY SHARPE: I would really appreciate that.

Ms PAUL: Thank you very much.

The Hon. PENNY SHARPE: I think my last question is to Mr Smith. You have been very critical in your submission about the Macquarie to Orange pipeline and processes to do with that. I am just wondering whether your organisation or yourself had an issue or a view about the stormwater harvesting project that was put in through Orange City Council.

Mr SMITH: It is quite involved—the stormwater harvesting and the Macquarie pipeline. First of all, the Macquarie pipeline had a very brief mention in the Centroc water study of 2009. It was only put forward as a drought relief measure. Then, all of a sudden, it became the only option. In many submissions it was pointed out that the stormwater harvesting could more than supply Orange with water. So we fully support the stormwater harvesting system. In fact, it would probably be good if it were extended.

When we are talking about stormwater harvesting I include residential and commercial building storage. I know from my own personal experience that I gain 20,000 litres from 60 millilitres of rain. So I only harvest water three or four times a year, at the most. So you can see that even in towns like Boorowa and places like that, it is a bit like *Back to the Future*. When we were young we had water tanks. I did. Now there is the possibility of encouraging people to go back to having water storage on their own properties, because approximately 50 per cent of water used in a household goes to gardens. That gives a means to promote a liveable city when people have their own gardens. So, yes, we fully support the stormwater harvesting system.

The Hon. PENNY SHARPE: There were some groups that opposed it. Is that correct?

Mr SMITH: Yes, what happened there goes back to what I said. The transfer of effluent water from Orange sewage treatment plant to the Cadia mine started in 1998. Then the people along Summer Hill Creek who used to receive that water—which amounted to approximately 10 megalitres a day—were missing that water. When the stormwater harvesting came about they saw that the stormwater harvesting was going to take more water from the stream. They had the opinion that the system could not meet that.

The Hon. PENNY SHARPE: Can I stop you there. Is it now the case, though, that they are getting that flow and that it has not had the impact that people thought that it may?

Mr SMITH: I will answer that. The problem existed from 1998 until a court agreement between the Summer Hill Creek water users and council came into being in December 2015. The terms of that agreement do not really satisfy the needs of the stream. It was a matter of a community group with a lack of funds trying to argue their case. It was a matter of accepting some sort of solution rather than continuing on to a court case.

The Hon. PAUL GREEN: On the last page you talked about public submission of Orange city. You talked about the approver and the proponent being one in the council.

Mr SMITH: Yes.

The Hon. PAUL GREEN: And then you go on to say:

> It does not give anyone confidence in the approval process when there is no need for public exhibition of the project, no peer review when the project is of a size that could be consider by the Planning Assessment Commission.

Do you feel that there was not enough public exhibition and opportunity for public comment on the matter?

Mr SMITH: That matter refers to the worthwhile pipeline going from Orange to Blayney to Carcoar. They released the review of the environmental factors. I will probably submit a submission on that at a later date because it is quite involved. In many of the submissions, particularly the alliance submissions on the

development application [DA] for the Macquarie pipeline, suggested that the pipeline going out to Carcoar go ahead before consideration of the Macquarie pipeline, because it offered greater water security to the region.

The Hon. PAUL GREEN: My point is, in terms of talking about Cranky Rock or these other things, would you not be confident that full public exhibition would be carried through?

Mr SMITH: I will just clarify the last point there too. It is understandable that the State Government want to quicken the approval process up, but when a body like Orange City Council is the proponent and the approval authority, it does not give any sort of public interest to have a proper say. That is the main point. My last suggestion in my opening statement is that every project of this nature should come with a peer review, because it is industry based and knowledgeable review. When the public is only given 28 days to review major things it is very difficult to overcome any misinformation that is provided by the proponents.

The Hon. PAUL GREEN: Who would provide the peer review in this particular case?

Mr SMITH: For example, if Geolyse—they are consultant firm in Orange—were to do a proponent's mission then you may have another firm, like GHD, to do the review. That was the case with the effluent transfer proposal at Bathurst Regional Council. When they tabled the DA they had already done a peer review of the submission and I think they more or less set a precedent for everyone to follow.

The CHAIR: That is actually quite a good idea. We will conclude this session of the hearing. Please do put in supplementary submissions if you think you would like to provide data or references or, preferably, if you can provide the papers themselves. Mr Burkitt, if you had some extra information that you wish to either table today or at your leisure then we would encourage you to do so. This inquiry does not conclude until November which means there is still time following the round of hearings around the State. As the evidence from witnesses goes up onto the website you may care to comment or offer additional information that you did not have time to present here today.

There are only 45 minutes to get your case put forward here, so we would welcome all and any supplementary submissions. Once again, thank you all for taking the time out to come and talk to us today. Your views are valuable and any information you can provide to support your views will be accepted and taken into account. Thank you.

Mr SMITH: Thank you for the opportunity.

(The witnesses withdrew)

(Short adjournment)

MARK MCKENZIE, Chief Executive Officer, NSW Irrigators Council, sworn and examined

STEFANIE SCHULTE, Policy Manager, NSW Irrigators Council, sworn and examined

The CHAIR: I call the hearing to order. Prior to proceeding to questions from the Committee, would either or both of you like to make an opening statement?

Mr McKENZIE: Chairman, thank you for the opportunity. I do not have much, except to say that we are happy with the points that we raised in the submission to the inquiry. I think in general terms it would be useful for us to outline very briefly that we represent 12,000 water access licence holders across New South Wales, in both regulated, unregulated and groundwater systems, and that is not just within the basin west of the divide but also coastal valleys. In the context of this inquiry, we obviously did not have as much to say about flood mitigation in the context of what we have seen through 2016 and earlier this year as we probably would have been prompted to say, so we are happy to take some questions about flood mitigation and communication issues on that.

The CHAIR: And we would be happy to receive a supplementary submission.

Mr McKENZIE: Happy to do so.

The CHAIR: We will go straight to questions.

Mr SCOT MacDONALD: An issue that has come up at a couple of places we have visited is the amount of enviro water held in the dams. In your submission you talk about carryover and various other things. Is that something you are hearing from members, and is there a problem or not? If there is a problem, do you think there should be limits or caps? Is it perversely impacting on consumptive water?

Mr McKENZIE: There is certainly concern among some of our member constituents. I think that is particularly so in the Murray and Murrumbidgee systems. We continue to be supportive of carryover and given that there is a 50 per cent cap of carryover against licensed volumes in the Murray and 30 per cent in the Murrumbidgee, we are reasonably satisfied that that is okay. The area of concern would be not around Commonwealth held water, because that water has actually been bought back from the markets, so in the context of carryover, it is not adding, in our view, the extra pressure that some of our constituents believe it does in respect of limiting the amount of water that may be available to them that underpins their annual allocations.

Where environmental and heritage held water has been previously sold back or purchased, or clawed back within government regulations and programs, I think there is probably a fairly limited understanding of what that means, because it is either held water or planned water—the planned water being the translucent or transparent flows. We acknowledge there are concerns. We believe, in general terms, as a risk mitigator, that the carryover system is a very important part of people's ability to plan forward, particularly when we are entering into a dry sequence.

Mr SCOT MacDONALD: Should there be more transparency around the Office of Environment and Heritage [OEH] water? It sounds like you are reasonably happy with the Commonwealth water holder and where it is currently sitting, but there could be better understanding and transparency where the OEH water actually is sitting in the dam. For instance, is it being used, that sort of thing?

Ms SCHULTE: Yes, the feedback from our members has been that they would like to see more clarity around not only the volumes, but also how it is managed and interaction also with Commonwealth-held environmental water and how that operates. I guess supplementary to that, there have also been a number of concerns raised that the planned environmental water does not currently pay the fees and charges for water held in dams and they are costs that are passed back to irrigators.

Mr SCOT MacDONALD: Can I double-check that? I understood—this might be Commonwealth water—it retains the characteristic of that which was acquired. If it is Commonwealth water, they would be paying fixed annual charges, but that is not the case for what you are talking about?

Ms SCHULTE: Yes, so the board entitlement by the Commonwealth retained the same characteristics and paid the fees and charges that are passed on through WaterNSW or Department of Primary Industries-Water, but in respect of OEH water, those licences pay the same fees and charges, but the planned water under the water sharing plans do not currently pay those charges and that is the transparent and translucent flows that Mark was indicating.

Mr SCOT MacDONALD: So inevitably that means someone else is picking up that cost?

Mr McKENZIE: Yes, and in broad terms our concern always is, as an irrigator organisation, that we are easily identified because we have licensed access water holders, so our concern as an organisation is to protect the fact that because we are easily identified, we can sometimes get laid off with a higher proportion of those fees and charges and the operating expenses of the system in regional New South Wales than we would otherwise like to see. The most important part of that is, and it is still to be determined by the Government and the current IPART determination period on WaterNSW charges is what will be the cost share accepted by the Government. We are waiting anxiously to understand what that might be. It could have an enormous impact on our costs and charges going forward.

Mr SCOT MacDONALD: We visited a hybrid solar-diesel scheme. I am wondering where your organisation is at and looking at, obviously, one of the higher inputs for your members, is that something that you are prioritising? Perhaps give us a minute on what you are doing about it.

Mr McKENZIE: On that I will defer to Stefanie because she spends at least half her time on the energy issue.

Ms SCHULTE: Yes, energy has been brought to the attention of council over four years ago now from our groundwater pumpers and, since then, we have spent an enormous amount of time and energy on the issue of power costs and the interaction of water use and energy use in irrigation, and it is coming to a point where it is too expensive for some irrigators to use their very highly water efficient equipment on farms because of the cost of power. We have been focusing very much on the framework of energy regulation in the State and across the National Electricity Market, and also the design, which is cruelling irrigators in the way it is set up.

But recently we have also looked at what the right energy mix might be for irrigators going forward. Of course, that then spans into the likes of renewables and also battery storage, which we see as an avenue to smooth out some of the peaks and to provide some sort of cost benefit to irrigators. In addition to that, there might also be opportunities for irrigators to be net producers of energy and to be able to feed back into the grid—effectively being a manager back into the system.

Mr SCOT MacDONALD: Given all the work you have done, what is your worst case scenario if present trends on energy pricing continue?

Ms SCHULTE: It is going to depend on a strategic assessment of the best option. There will not be a blanket solution for every irrigator going forward. However, there might be some regions where going off grid might be the best solution. For some there will be distributed energy generation and sharing of some of those benefits. That might be the most optimal. Of course, we also recognise that regional communities are hanging off that same energy grid. Having irrigators across the board going off grid is not the best solution for anyone.

Mr SCOT MacDONALD: There would be stranded assets.

Mr McKENZIE: There are two concerns, and one is that there will be wasted investment. A lot of people have invested, including the Federal Government and the State Government, in irrigation efficiency works and measures.

The Hon. RICK COLLESS: By way of stranded assets.

Mr McKENZIE: Absolutely. There are stranded assets in the first instance. However, we have the bizarre situation where the Government is going to spend more than $10 billion on the Murray-Darling Basin Plan, a lot of which will go to on-farm or distribution system upgrades. Where that involves pumping and pressurising irrigation water, people have a disincentive to use those schemes, as you would have seen in Griffith and elsewhere. So we have one part of the policy kicking against the water efficiency policy within government. In terms of our worst fear, we will have a lot of stranded irrigators who cannot necessarily afford to have a fully integrated off-grid system, and who will still be reliant on a grid with galloping prices which make it uneconomical and which will significantly undermine the sustainability of that irrigated agriculture for those enterprises.

The Hon. RICK COLLESS: Mr McKenzie, a few moments ago you talked about translucent flows and transparent flows. For the benefit of the Committee, can you explain the difference between the two?

Mr McKENZIE: They are rules-based flows. Using the Murrumbidgee and the Lachlan rivers as an example, where those two systems work, a transparent flow is assumed to be a flow that comes from tributaries upstream of the dam. Under the rules-based system, it is then passed straight through. It is effectively adding one for another. Under the rules-based approach, a transparent flow is captured to underpin both environmental and productive-use licences. The rest of it is passed through. It is either the whole or part. It is a tough one for some people to get their head around, simply because it is not stored water per se, and it will not necessarily

flow every year. In fact, until last year it would have been some significant period since we had seen transparent flows in those two river systems.

The Hon. RICK COLLESS: In the case of the translucent flows, they flow straight through for environmental purposes.

Mr McKENZIE: It is volume for volume. That is right. There is an assumption that that would mimic a natural flow at particular times of the year.

The Hon. RICK COLLESS: I think we are talking about State water here rather than water held by federal bodies. Is that correct?

Mr McKENZIE: In the context of the State inquiry, yes, I would think that is the case. However, there is a significant interaction. Perhaps we can talk about that separately.

The Hon. RICK COLLESS: In the case of water held by the Office of Environment and Heritage as environmental water, when those translucent flows occur we could get an increasing proportion of environmental water held in the dam. Do you agree with that statement?

Mr McKENZIE: Not under translucent flows, which are passed through, but under the transparent flows, yes, you would think that as a percentage of the water held—and therefore allocated either to those environment licences or to private licences—they would get an increase in their licence volume.

The Hon. RICK COLLESS: In the case of a translucent flow, where that is meeting the river's environmental requirements, would the Office of Environment and Heritage have an inclination to retain that water for a future event, or would it still let it go as originally planned?

Mr McKENZIE: We are aware of it doing that, certainly on the information we have, in some streams such as the Gwydir. In fact, it has had a significant volume of environmental water that it has held onto for a number of years.

The Hon. RICK COLLESS: When it is productive water, it cannot be held for more than two years.

Mr McKENZIE: Yes, but it depends stream by stream.

The Hon. RICK COLLESS: That is the issue; there is an increasing amount of environmental water stored in the dam at the expense of consumptive water.

Mr McKENZIE: Of course it can be rolled forward under some circumstances. But ultimately the water is being held for a productive purpose. Unless people are very risk averse, or believe they do not want to trade that water into the market, then that becomes part of WaterNSW's audit procedure and it is sent down the system. We think the fact that it is a valuable resource, that there is an operating market and that at the moment the marketplace gives good value stream by stream, if they were able to trade it they would. We believe the checks and balances do not tend to favour build-up beyond the caps currently in place, or would not if these caps were not in place.

The Hon. RICK COLLESS: In the case of water that is going being released from the impoundments for productive purposes, is there an environmental benefit for that as well as it travels down the river?

Mr McKENZIE: There is to the extent that it obviously helps to keep the system wetted up, and also obviously in terms of those flows underpinning the underlying river health at the time, even though it has been drawn further down the river. I make the point that a number of large corporations do a significant amount of environmental watering for both State and Federal environment agencies. There is a very close interaction between the two.

The Hon. RICK COLLESS: In that case, should the environmental benefit of that consumptive water be recognised and reflected in the water pricing policy?

Mr McKENZIE: It is to an extent with the large corporations. I do not think it is with direct diverters necessarily. However, for the large corporations there is certainly an offset with the water that is passed through as conveyance water. Sometimes those losses are partly offset, because obviously they are getting leakage in the river systems when they are sending down those slugs of water. In broad terms, there is a frustration within regional communities, particularly those that are peopled by a significant number of irrigators and irrigation industries, that there are very significant flows, including tributary flows downstream of the dams, that perhaps do not get recognition of their environmental benefit and value that they would like to see.

The Hon. RICK COLLESS: They should be considered as translucent flows also?

Mr McKENZIE: In the sense of classification, yes, but technically only above the dam wall, and they are. Of course, in some systems the pumping rules allow that to be taken into account if they are supplementary flows, but only to the extent that people hold licences. You can never exceed the licence volume.

The Hon. RICK COLLESS: In general, obviously as the New South Wales Irrigators Council you would keep a very close eye on what is being said publicly and politically about certain dam proposals and so on. What is your view in general about the need for additional storage on a variety of river systems across the State?

Mr McKENZIE: In general, we are certainly not anti-dams. Our view in broad terms is based on two principles. One is whether the business case stacks up, and the other is whether it stacks up in regard to the irrigators in that system. In another words, if the cost to them of the share of building, of the maintenance and of operations is going to outweigh the benefit of having a further underpinning of their future applications then we, on behalf of those member organisations, would obviously talk to government about reassessing whether those dams are worthwhile.

The other principle is that we generally would favour the holding of water high and deep, as I think we outlined in our dams task force letter to the Deputy Prime Minister. The reason for that is simply to mitigate evaporative losses. In other words, we are getting bang for bucks in terms of where we are holding it and how valuable it is as an underpinning of future allocations. In general terms, you would have seen in our submission that we believe that where dams are well sited, and not all of them are, and where they have a good capacity to harvest water, particularly in wetter seasons, augmentation of dam capacity is better than considering greenfield sites. Probably the one that is further down the track in terms of assessment is the Cranky Rock proposal on the Belubula.

In broad terms, pending a final assessment of that and the impact on irrigators in the broader Lachlan system, we are supportive of that for one key reason, and that is Lachlan was more impacted by the millennium drought in terms of irrigation volumes available than any other stream in New South Wales.

The Hon. RICK COLLESS: In light of that, there are proposals to look at Wyangala and Burrinjuck augmentation. Would you see such things as preferable to a new dam site?

Mr McKENZIE: Yes, we would because we already have significant irrigation development on those two systems and others. Having said that, the Mole River Dam is worth further investigation, for instance. We do not have a problem about coastal valley dams either, or coastal facing dams, except that we currently have a sustainability crisis in the north and south coast of this State, with the dams they already have. The costs and charges are being spread and amortised over fewer and fewer irrigators and fewer and fewer megalitres, and that is certainly causing a significant cost crisis. On that basis, coastal valley storages probably need to have the ruler passed over them, not that there is less irrigation water as a measure of what is stored in the broad but there is less in their regulated systems that is held and supported by dams than there is in their unregulated systems—run of river, in other words.

We need to be cautious. The caution principle is about ensuring the business case stacks up. Where it stacks up, we are absolutely in favour of doing that. I would say is a qualification though that because all the water sources in the Murray-Darling Basin are not capped, it is not new water per se but capturing wet events allows us to underpin forward allocations. Even though it is not new water in that sense, it does have a very, very high net benefit if we can commend those dams. It really comes down to bang for bucks; it is easier to augment them or change the rules, Burrendong being a good example around flood mitigation rules and airspace, than to look at a brand-new greenfield site, which is much more expensive.

The Hon. PENNY SHARPE: I am interested in what you said about augmentation. Every place gets dealt with individually. Do you have a view about who should ultimately decide and whether there is enough planning at the New South Wales Government level to take a whole of New South Wales approach and make decisions in relation to investment priority?

Mr McKENZIE: I suspect it is probably driven primarily by urban water underpinning. That is obvious because it is number one in the hierarchy. Our view is that WaterNSW are an expert corporation. They have the resources and certainly they have the brief to undertake those studies. Obviously there is an interaction with DPI Water around whether the planning function happens.

The Hon. PENNY SHARPE: Your submission talks about Infrastructure NSW. What role does it play?

Mr McKENZIE: To the extent that they have had a recent report about what their priorities are, I think that is very appropriate. I would not like to leave them out of that, but in the context of what they suggested, if they have done that without talking to water agencies that would be—

The Hon. PENNY SHARPE: That would be a fail, yes?

Mr McKENZIE: That would be a fail, yes.

The Hon. MICK VEITCH: In Deniliquin concerns were raised about post-flood event consultation with communities to work out what lessons could be learned. Have your members expressed views about post-flood event consultation by bureaucracies? If so, what is that feedback?

Ms SCHULTE: I might start and then hand over to Mr McKenzie. We had quite extensive consultation with members on the North Coast, given the very recent flooding events. There was significant concern that the response time from when there were likely going to be significant issues in the area in and around Lismore notifying individuals was very short. A lot of businesses were not able to save some of their stock or get out in time. According to the feedback, a lot of it was put down to the fact that the central organisation around notification and early warning from the Bureau of Meteorology was not as good as it used to be, when it was more localised and done by the local State Emergency Service officers. They used to provide notification around flooding, and basically it would have been preferable to have that system. Individuals know the system very well and officers on the ground know the smallest streams extensively and so they can make an assessment early on of whether river level are rising, not at the main gauging station but and other smaller streams, and whether it will be an issue.

Mr McKENZIE: In terms of the Murray Valley, particularly the two central and southern systems that were very heavily impacted, were the Murray Valley and the Lachlan. There was a general view amongst our membership in the Lachlan that some things are very difficult to avoid. In broad terms they thought that the way WaterNSW had released to manage that flood event was, if not optimal, not bad. I do not think that was the view amongst people in the southern Riverina and the Edward-Wakool area necessarily. There are a couple of things to mention on that. First, the flood below Yarrawonga and Mulwala was quite different to previous floods. Every flood is a bit different, because there are new culverts or new roads or other things. There would appear to be anecdotal evidence that new growth in the Barmah Forest pushed water north through the Edward-Wakool system. It was not like some other events.

You would be aware the Bullatale Creek, the Tuppal Creek and so on had a pretty hard time, because that pressure broke their levee banks and caused significant damage and hardship to landholders there. In broad terms there was disappointment that DPI—Water have not yet released the information that they have been mapping. We understand they have done a lot of mapping where the water went. The ongoing concern is not just about the fact that the releases may have been mismanaged in the context of the size of that flood. It was enormous: There were 203,000 megalitres a day going past Tocumwal. It was not the biggest, but it was a significant flow.

The interaction is that we have had a streamlining of the administration of water in the State in terms of WaterNSW being formed out of the Sydney Catchment Authority and the old State Water. We have had the Office of Water now being DPI—Water and integrated into that system. We have had very significant changes of personnel and leadership. In terms of DPI—Water as the regulatory and policy body, they have had a much greater workload of things to do under the new leadership. I think there is a general frustration, probably in the broad amongst our membership, that that has meant that the ball has been dropped on some things.

When you link it into the work that the State Government, through DPI—Water, are doing around management of constraints under the basin plan, that links in very directly to how that flood event was managed and what people can expect to see on the grounds, right or wrong, in future events. That is cause for concern. I do not want to slag off about DPI Water, but clearly we have said to the Government on a number of occasions that there is never a good time to do anything, but with everything on the plate at the moment around the basin plan, in particular, and not having the foresight to know that we were going to have a significant flood event in the Murray and the streams, it is never perfect timing.

The Hon. MICK VEITCH: My other question relates to IPART and the process that is followed to set user charges. We were in Tamworth yesterday and it would be fair to say that the Peel Valley irrigators were critical of that process.

Mr McKENZIE: We would not expect them to be otherwise.

The Hon. MICK VEITCH: What is NSW Irrigators Council position on that Independent Pricing and Regulatory Tribunal process—firstly, your position on the methodology that is used to determine the user fees

and charges and whether you think that could be improved? Secondly, do you have any views about the rigour that is put into the costings that the Government, DPI Water for instance, provides? I ask this because if Cranky Rock goes ahead the irrigators downstream would probably provide support at the moment but it would be qualified support because they are not really sure what they are going to have to pay. If what happened in the Peel Valley was replicated in the Belubula I do not know that they would then support the dam. So, there are two questions—the methodology of IPART and the rigour that is used in the input costs.

Mr McKENZIE: I will defer to Steph because she spends the other half of her time, apart from energy, on this—particularly around pricing issues.

The Hon. MICK VEITCH: I did notice that she sat forward and got quite excited when I was asking that.

Ms SCHULTE: In terms of the first point around the methodology, there have been so many changes over the last three determinations it is quite hard to answer that question. We have had three determinations, three bodies who have been regulating State Water or WaterNSW charges under three sets of regulations. It used to the be Independent Pricing and Regulatory Tribunal Act, then it was transferred to the ACCC. Now it comes IPART again, under ACCC rules, which are also currently under review. We do not know what the final decision will be about those rules.

In terms of the methodology that is applied to how the charges are set, it is still very much in flux. We are working at the moment under the ACCC charges, but if there are any further changes to that, it could change and revert to the IPART Act, which has got some differences in the way that charges are determined. We were quite satisfied with the way the ACCC reviewed charges last time for State Water. We are yet to see the final determination. We are expecting the final report from IPART, about the next four years of charges, to be released on 15 June. One of the concerns that Mark was raising was around the sharing of costs between Government and water licence holders in the State. The rigour will really depend on the final report.

I have to say that we have seen IPART going back to the old approach that we had prior to the ACCC taking over—sometimes in a good way and also in not such a good way. There have been, particularly around the cost-sharing methodology, some issues that have been clearly left on the table for far too long. There have been increasing amounts of environmental water recovered from the Commonwealth. There are clearly, therefore, also additional demands put on WaterNSW to manage and administer those environmental water holdings—if it is State or if it is Federal—but under the current cost-share arrangement this additional demand put on the utilities is, effectively, not recognised.

The other significant issue around the cost-sharing framework is legacy cost, where we have drawn a line in the sand at 1997, and any prior capital investment is effectively covered by State governments, but everything that has come since has been passed 50-50 as a share to licence holders. In the context of augmenting any future storage capacity, that could significantly increase costs to irrigators.

The CHAIR: Because it would not be considered as part of the legacy structure? It would be new money.

Ms SCHULTE: Yes; it would not be a legacy cost. It would be new money and it would be new capital investment. Both capital and operating expenditure would be shared 50-50 for those things, going forward. In terms of the question about rigour, across the State we have significant concerns about the way that costs, through Water Act and the Murray Darling Basin Authority gets passed back to licence holders in the State. There is simply no regulatory oversight at all over those charges. In particular for the New South Wales Murray it makes up over 70 per cent of their costs when it comes to water charges. It is also a significant concern for the Murrumbidgee.

With respect to the IPART process; these charges are not part of the process at all. IPART effectively is given a direction from the New South Wales Government about passing those costs—or at least a share of those costs—through. If I remember correctly, we are looking at around $16 million to $18 million for the next year. Those are Murray Darling Basin charges which will be passed back to the New South Wales Murray and the New South Wales Murrumbidgee. Those are significant costs. If we go back through the determination those charges were about $8 million.

Mr McKENZIE: I wonder whether it might be useful if provide the inquiry with our IPART submission which gives the detail of a lot of these concerns.

The CHAIR: Yes, please. We would love you to take that on notice.

The Hon. MICK VEITCH: My last question relates to the managed aquifer recharge schemes. You may wish to take this on notice. Do the New South Wales irrigators have a view about aquifer recharge schemes? I think your submission touches on it a bit so can you just elaborate on your submission.

Mr McKENZIE: Our position has not changed. We are not against aquifer recharge but in the context of the basin we have to understand that that is also capped. It may be surface water or a flood event that is injected into an aquifer but it is capped in the same way. In other words, productive use is capped and all the rest goes to run-of-river and environmental flows. In terms of that ground water we have a major caution. A classic example would be a very high-value, high-quality aquifer—the largest in the State is the Murrumbidgee aquifer. We would be concerned if you were injecting floodwaters, with whatever is in those floodwaters, directly into an aquifer that is likely to be redrawn in fairly quick order. In other words, what will be the impacts of non-potable water injection?

I know that we have had aquifer recharge successfully in some small aquifers, so we are certainly not against it but we believe it needs to stack up in terms of a business case and on the technicality of the potential down sides. Just to go back to taws, in broad terms we represent irrigators around protecting their property rights in water. The other thing we protect against is third-party impacts. If aquifer reinjection were to have an impact on the quality of water and the use of that water as a result in groundwater systems we would have a concern. We are certainly not against it per se. Our other caution is around the cost of drawing that water out. With the galloping cost of energy, we believe that we should not be blinkered about the full cost—not just of injecting it, but how we get it back to the surface to utilise it.

The CHAIR: On the last page of your submission I fear there may be a word that has been misused on the third line. You say:

> NSWIC is not convinced that, despite recent accusations from some quarters within the irrigation sector that Government needs to regulate the water market to prevent price speculation and market manipulation, there is sufficient evidence yet provided to prove such allegations.

Do you mean there is "insufficient evidence" yet provided?

Mr McKENZIE: It should have been "insufficient". My apologies for that.

The CHAIR: I thought that was the case.

Mr McKENZIE: It would be useful if you did not tell my chairman about that.

The CHAIR: We will keep it between us!

The Hon. MICK VEITCH: It was really nice to leave that mistake there for us to pick up.

The CHAIR: Yes, thank you for that. It was just to make sure we were paying attention! What sort of resources does your council have in terms of staff to do economic research, or are we looking at it.

Mr McKENZIE: Effectively, you are looking at two-thirds of it. The other third is a marketing office executive member. That said, we do have a broader network of regional organisations who are members of ours who we can draw on.

The CHAIR: And do they have some technical expertise?

Mr McKENZIE: Absolutely. And we have an extensive range of reference groups on almost all subjects, from energy through to water sharing plans, groundwater and so on.

The CHAIR: Great. One of the things we have been attempting to do is sort of sneaky—I have used the words "quick and dirty" previously about inquiries and I have gotten myself into trouble by using those terms. What we really need to do is, in these recommendations to the Government, try to provide a position of this Committee on each of the terms of reference. We will call it an informed position that might merely reflect what is fed to us by people who make submissions and people who appear as witnesses. I will now go to your comment on 1 (a) of our terms of reference. Your submission states:

> **… The requirement for a water equation on supply and demand out to the middle of the century for rural and regional NSW**
>
> NSWIC supports the continuation of the water supply planning functions of WaterNSW and DPI Water as the appropriate Government agencies in determining the long term water needs of rural and regional NSW.

Having said that, my guess would be that if those two agencies put their minds to doing this particular task the first people they would ask would be the agricultural aggregation associations and the water users like you. They would come to you and say, "Have you got any data or anything we could start building a model on?" You are the people who use the water for production purposes. Would you and your client organisations be able to

assist us by telling us, in terms of resources, whether you would be able to give us some closed system estimates? We have asked individual landholders, valley associations and the Peel River people to do it.

With all due respect to saying it is the job of DPI Water—and we will ask them this question—I guarantee they cannot answer this question unless they ask the producers. They may be able to go to Australian Bureau of Agricultural and Resource Economics and Sciences or other people like that to get the data. Perhaps as a question on notice could you think about whether you might be able to supply the Committee with any data that we could use in our own mad extrapolations of what the answers to those questions might be? Otherwise we will just go through the process, we will have DPI Water and so on in here as a witness, and they may or may not be able to give us the information we want. I am trying to head this off at the pass a bit. By getting ahead of the game maybe we can put something up so that the Government say, "Oh, dear. We had better do something about it." I am not asking you to commit now, but could you think about that? I will get the secretariat to send you a proper question on notice.

Mr McKENZIE: We are happy to take it on notice. If we could get a question on notice it would perhaps prompt us to look at some gap analysis. I think that is probably the issue. Many government agencies, State and Federal, rely on Australian Bureau of Statistics data and I am not sure that it is actually presented in a way that is particularly useful at times. We struggle with that too.

The CHAIR: The second question is in relation to some of the questions you have been asked about pricing in the future—particularly irrigators, who need electricity to pump. You are hypothesising that it is extremely difficult to come to any of those conclusions because there are so many inputs into the equations. The sorts of things we might put forward in our recommendations are, for example, that the Government should integrate the very disparate forward planning exercises they do in terms of power, water and land availability and planning restrictions or the reverse of that, in trying to come to some of these. These are ideas of what this State and perhaps the Commonwealth might need to do out for the next 50 years.

And please do not laugh. If we do not start putting these types of time frames in the Government's view and in the public view then we will continue forever and a day to think in four-year cycles to the next election—the next Federal election or the next State election. A new government comes in and—bang!—a dam is no longer viable because of political aspirations or whatever. We would like to get our witnesses to start thinking about this. If there is anything you would like to put in a supplementary submission, no matter how wild—within the ambit of what your client organisations will let you get away with—could you try to give us some of the Irrigators' Council's ideas on what you would see as the way forward?

Irrigation and irrigated land is obviously the highest production category, generally speaking, of use of that land. The miners might argue differently but we are talking about agriculture here and you are the Irrigators' Council, so you have a unique opportunity to gather data. Perhaps you could just tell us where and how you think the Government should go to get that data and what they need to do. Mapping aquifers needs to be done because you do not know whether down the track we might have a very cheap source of power to pressurise and pump aquifers. So aquifers need to be identified before you start.

If we were ever to go down the track of the Bradfield schemes and start bringing water over the stone curtain from east to west, there is no point putting it into open storage as it will evaporate, so somewhere along the line technologies will need to be developed. Whether your 12,000 members like it or not—and they probably do like it—they are going to be right at the front of all this. We had an inspection earlier of a pretty successful looking operation—an integrated operation, a smart business. I daresay all your irrigators are similar sorts of people because they have had to contend with so much variability. We have talked about the variability of pricing. We have an independent body out here that is now part of another body that has different rules and there are three sets of regulations trying to determine how you come to price something. Not many other businesses have to operate in that sort of market. That was a roundabout way of saying, "We need your help." If you can think of anything you would like to put forward, do not be frightened and put it forward.

Mr McKENZIE: We are glad to take that opportunity. Thank you.

The Hon. PAUL GREEN: My question comes back to the cost burdens. We were in the Peel yesterday and heard their cost per megalitre was about $58 and for the Lachlan it is a lot lower. How do we deal with the situation up there where the 200 or so irrigators are paying for the infrastructure costs plus their usage? How do get that to be a bit more affordable?

The Hon. RICK COLLESS: Equitable, perhaps?

The Hon. PAUL GREEN: Affordable as well. We know infrastructure is going to cost you, no matter where you put it. Obviously if you have 1,000 people to pay for it the division is a lot lighter than if 200 people are paying for it. Do you have a view as to how we deal with that?

Mr McKENZIE: Ultimately the equation is around the number of megalitres stored, the cost of the infrastructure to build and run, how you amortise that over a number of years and the number of megalitres that go to particular categories of user. In the case of the Chaffey Dam—augmented, obviously; that has probably assisted to some extent—while we understand the Peel River irrigators are very concerned about those costs they certainly do not have the highest costs in the State on a pro rata basis. Certainly they are closer in the mechanics of what they are facing around costs than the coastal valleys are.

We tend to think of that problem for them of unsustainable irrigation in the same context. We have certainly asked the State Government to take a view of looking at coastal valley sustainability issues quite separately to other regions. On the inverse, that is the issue. You talk about Lachlan. There is a very simple calculation that my chairman uses when you talk about water in inland New South Wales. There is more water allocated for irrigation use in the Murray than for every river north of it, there is more water allocated in the Murrumbidgee than for every river north of it and there is more water allocated in the Lachlan that for every river north of it.

The CHAIR: And the northern irrigators agree with that.

Mr McKENZIE: And because of the variability of the northern system, so the issue of Peel River irrigation costs has been an extremely difficult nut to crack for a long time across many governments. I think if we had the answer to it, we would have suggested it. It is difficult because of what they are growing and what they are doing with that water, and ultimately they have to make a decision whether they can wear it or not. Where it becomes a crunch point for them and for other systems of similar ilk, they look south and say, "Why are we not paying the per megalitre charges that we see in the Murray or Murrumbidgee or Lachlan?" It is just about a scale issue, really, as far as that is concerned.

The problem is the percentage of fixed cost, whether they use the water or not, versus their usage cost, their variability cost. While we have a stated policy in the inland regions of favouring 40 per cent fixed, 60 per cent variable, we are aware in the Lachlan, and I think of late in The Peel, there has been some consideration about whether to go to 80:20 or in some cases even to 100 per cent fixed, which is bizarre, because it is the inverse of their problem. It might actually mean that year on year they are better off when you do it over the long run. We leave that up to our individual members to make that call and if enough of them do make that call, it changes our policy position and the foundation stone of that.

In other words, we do not have an easy answer for that, because it really comes down to how many irrigators, how many megalitres, and what does it actually cost to run the system. Whether that is a fair cost is an issue that we have in the context of IPART determinations. How much of that is reasonably being borne by Tamworth City Council and by the State Government through an amenity and environmental cost that is assumed

The Hon. PAUL GREEN: We are going to put IPART on notice about that. We want an accurate costing—

Mr McKENZIE: I think we have that concern about the way that both the capital structures are valued and the operating costs are determined. That would be a broad concern that we have. Certainly Bega-Brogo Dam, the Brogo Dam of Toonumbar in the Richmond-Wilson system, and the Peel River through the Chaffey Dam are all difficult ones because we are facing a situation where if water charges continue to rise, it will price those irrigators out of the market and then they will not have anybody to share those costs with.

The Hon. PAUL GREEN: Then it leaves a lot less to pay the infrastructure cost, which increases the price. It is just crazy, if you are looking for prosperity in New South Wales.

Mr McKENZIE: Effectively stranded irrigators, that is right.

The CHAIR: And the OEH sits back and rubs its hands together because it gets it all for nothing.

The Hon. MICK VEITCH: Maybe you can take it on notice and provide us with a solution to the problem for Peel Valley.

Mr McKENZIE: Mr Veitch, I would be very happy to do that, but I have been thinking about it for quite a while. Suffice to say that we do not have a particularly amiable relationship with the Peel Valley irrigators, because our view is there should not be postage stamp pricing. We do not believe in cross-subsidisation for exactly the subset of what we have been saying. Every system has different structures, different costs, and different numbers of megalitres deployed, and irrigators. Some of them put in very high-value permanent planting crops in horticulture, and some of them grow grass to feed cattle. We have been asked recently what really determines whether the water charges that irrigators pay makes them viable or unviable. Most of that is derived around what world markets are doing and what commodity prices are. If they cannot

grow rice at the marginal cost of water, which is the temporary market price, then they do not grow as much rice. Same with cotton, if they do not have water there or they cannot draw it out of the ground cheaply enough, they do not grow cotton.

The CHAIR: Thank you very much for agreeing to appear before us. We appreciate your input, and we would like anything else you can give us. Your submission was valuable, but it has not provided us with the answers yet. I am sure you will be able to.

Mr McKENZIE: We will see what we can do, chairman. Thank you for the opportunity.

(The witnesses withdrew)

JOSEPH PAUL CURRAN, Producer, sworn and examined

MICHAEL RENWICK PAYTEN, Chairman Belubula Landholders Association, sworn and examined

The CHAIR: Once again, on behalf of the Committee, I thank Mr Curran for allowing us access to his property this morning. It was a very valuable exercise in showing us the effects of flood and how quickly or not so quickly properties can recover from it. I ask either of you or both of you to make a brief opening statement, please.

Mr PAYTEN: I will start. First of all, thank you for letting us appear before you. It is an opportunity for us to put our point of view. As I said, I am chairman of the Belubula Landholders Association. We have got about 54 financial members. We represent a group along the Belubula River, primarily below Canowindra along the Belubula before it meets the Lachlan. We are mainly irrigators, some non-irrigators, and some industry, but we represent 54 members. Just a brief history on the dam on the Belubula. In the sixties, the dam at Cranky Rock was slated. It looked like it was going to happen. People were certainly paper cutting, saying that people from Wyangala were going to move straight to Cranky Rock and commence the building of the dam. It did not happen.

The Minister, in his wisdom, decided to put the dam at Carcoar, which is right at the top of the catchment, as one single little tributary, a total of 35 gigalitres. The biggest dam site at Cranky Rock, according to stage two of the feasibility study, is 1,000 gigalitres, so we are talking 30 times the water, which, of course, at the time, my father and other people were devastated—they were happy to get a dam, but thought what a silly place to put a dam, which it was. The Belubula has an average annual flow of about 300,000 megalitres. At the moment, it catches virtually none of that—10 per cent right up the top. The rest of it—we either have feast or famine. When I say "feast", there is so much water that our flats and our properties are inundated and ruined for a year. Production is virtually lost.

Mr PAYTEN: Last year, on any given day from about June until September, we had 20,000 megalitres a day going down the river. People were asking when they were going to build this dam. As farmers and having lived out here for generations, our first principle is to save something we have a lot for a time when we do not. We do it with grain and hay and anything we can, but this one is out of our league. The logic of saving water for a time when you do not have any has been around for thousands of years. We feel that it is an obvious solution to a lot of problems.

We also know that on the Belubula River there is not enough of us and we are not big enough to have the dam built just for us. But the flow-on effects down to the Lachlan River and the benefits to Central West towns and industries are all starting to become obvious. Basically, you cannot have people without water; you have to have water. It is as simple as that. The Lachlan River has the most zero allocations of any river in western New South Wales. If we got the biggest dam, it would effectively double storage on the Lachlan River. Wyangala Dam is 1,100 gigalitres, and there is a site at Cranky Rock that is 1,000 gigalitres. We are obviously strong supporters.

The CHAIR: Mr Curran, would you like to put something on the record?

Mr CURRAN: I would, and I echo Michael's comments. We are also farming on the Belubula River, a little upstream from Michael. We have about 5,500 acres, 740 of which are on the Belubula, in river country. Nearly all of that was ruined as a consequence of the floods last calendar year—June to September. We might have had 13 floods during that period. Our company and family are of the view that a dam at Cranky Rock would make a significant difference to farming on the Belubula River.

Some benefits of the dam would be reliable supply of irrigation water for Belubula irrigators and flood mitigation. There would also be an opportunity for more irrigation to set up, and increases of water for other industries such as mining. The dam could also be used for recreational purposes such as fishing, swimming, waterskiing, sailing and so on. Another benefit of the dam would that there would be less impact on the Lachlan River at times when there is a lot of rain in the catchment at Mount Canobolas. That impacted on the flooding in the Lachlan River. I understand the Newell Highway was cut for some time, and very sadly lives were lost. It is our view that a dam at Cranky Rock would be a benefit for many people and townships. Townships such as Orange, Cowra, Canowindra and some local towns would benefit.

The CHAIR: Mr Curran, before we proceed, during our visit this morning we asked for some economic data based on current valley output. The association might be able to provide some information.

Mr PAYTEN: Yes.

The CHAIR: You might be able to extrapolate as to what you think your members' production output would be given that the water equation in your view is fixed. That is, what would be your output if there were no flooding and if there were adequate water to develop your irrigation?

Mr PAYTEN: We will take that question on notice and get that information back to the Committee.

The Hon. MICK VEITCH: Mr Curran, thank you for showing us around your enterprise this morning.

Mr CURRAN: It was a pleasure.

The Hon. MICK VEITCH: It was very interesting. I refer to the flooding events you have mentioned. When the Committee was in Deniliquin earlier this year there was criticism of the bureaucracy's post-flood event consultation with communities to determine what could have been done better. What has been your experience post flood events? Have you had consultations with government agencies about what could be done better in future flood events?

Mr CURRAN: There has been an opportunity to get funding, which is a bandaid solution. It is welcome, but fundamentally the only solution I see medium to long term is to build a dam and to stop the water coming down.

Mr CURRAN: There is really no other solution. In Wyangala there is always a discussion about air space. There is no discussion about air space at Carcoar because all the water comes in below the dam. The Belubula has a maze of tributaries. We have always been told that it is fastest flowing river west of the mountains. There are feeds all down through Orange, Blayney, Carcoar, and Mandurama out at the edge of the range. All the catchment is below the current dam. There is nothing we can do to mitigate floods as far as holding water back or saving air space in Carcoar Dam is concerned because it does not happen.

The other side of it is that had we been sitting here a year ago we would not have been talking about floods as much; we would have been talking about zero allocations because we had three in a row on the Belubula River. The only water available was carryover water that we could perhaps purchase. But year after year, we get zero, zero, zero. Thirty-five gigalitres is not enough water; it is neither here nor there. It is better than nothing, but only marginally. The dam is now virtually full because we had such a wet spring/winter last year, and there was not much call for irrigation over what was a wet summer. The downstream tributaries kept feeding the river. We have a nearly full Carcoar Dam now. Next summer we will get a good year out of it, but that will be it; there will not be much left after that.

The Hon. MICK VEITCH: It must flow quickly. I live on the Tumut River, and it flows pretty quickly. We were at Tamworth yesterday and heard from the Peel Valley irrigators that they were paying $54 a megalitre in user charges, which are determined by the Independent Pricing and Regulatory Tribunal. People there are not buying water; they cannot afford to irrigate. If that were the scenario for people on the Belubula River after the construction of the dam and if they were the fees, would you buy the water?

Mr PAYTEN: It would be marginal. You would have to do the sums. Currently people have been known to pay up to $100 a megalitre for annual use. If the ducks are all in a row, things are dry elsewhere and lucerne hay is worth $12 or $14 a bail, you could probably afford that and pay it. But in an average year, probably not. That is something you would have to think about. We have just had a survey done as part of stage 2 of the feasibility study about capacity to pay and interest in paying. Of course most farmers say that they are not particularly interested in paying much more.

What is the life of a dam? Is it 200 years or 300 years? They could be there for 1,000 years. Wyangala and dams like that are hopefully built for ever. The cost has to be outlaid over so many years, and it is probably unfair to ask the current generation of irrigators to cough up more than they can afford. I know it is before the Independent Pricing and Regulatory Tribunal now, and I heard the earlier discussion about being charged for water that is not in use or water that is in use but more for high security. They try to balance the books as best they can.

There would be many end users for the dam at Cranky Rock. Belubula irrigators do not have a big voice in the State; there are not many of us. I go to Lachlan Valley water meetings and customer service committee meetings. People at the bottom end of the Lachlan River say they do not want the dam because they like the free-flowing water coming down. Not everyone knows that the Lachlan is effectively a closed system; it terminates at the Great Cumbung Swamp. It does not spill into the Murrumbidgee River except in extreme years. I am not sure that there is any kind of pushback from the South Australians, because they do not get near the water anyway; it terminates down there. I do not know. Obviously I am an irrigator and I am pushing my own barrow. In the end, you have to have the triple bottom line. It is about people and about people living out

here. Unless you want to import everything from China, we have to have water to get production happening. Mr Curran's place is a credit to him; it looks fantastic. He has a good workforce that has cleaned up the whole place. That could all be underwater, decimated, in another two months. It is a lottery we have every year. People say, "Why do you not just go to the casino, Michael?" I can plant the flats again and they can all get drowned.

In the 1950s, a lot of settler blocks were on the Belubula. After the war they cut up these blocks and gave a lot of people little blocks on the Belubula. They all went broke. They all ended up saying, "This is killing us." Every year you get everything set up and looking good. Lucerne, which is the main industry, drowns after a day under water in warmer conditions. It can survive winter floods, but if you get a summer flood, which we sometimes get, it is back to square one. You clean it all up again, work it all up again, sow it all down again and hope to get a year out of it, but get smashed again. You need a big heart to grow to lucerne on the Belubula.

The Hon. PAUL GREEN: Is any research being done into the life of dams by the dam safety committee?

Mr PAYTEN: I do not know.

The Hon. PAUL GREEN: One would think that they would have done some studies. They were doing some research on Copeton.

The Hon. RICK COLLESS: That was purely on spillways.

The Hon. PAUL GREEN: But it was based on some studies. I think it came up with the one in 1 million year risk.

The Hon. RICK COLLESS: Yes, but it is hydrological.

Mr PAYTEN: I imagine the work has been done, but if governments try to get the money back too quickly—

The Hon. PAUL GREEN: Yes, it is a very good point that amortisation over one generation is quite unfair.

Mr PAYTEN: Yes. We have been quietly agitating for a dam for years. We were pleasantly surprised when it came up at a conference of The Nationals. It has got a bit of momentum. We have had stage one of the feasibility. They have looked at lots of sites on the Lachlan. They have identified Cranky Rock. They have named two sites, but they have got the naming wrong. One should be called Pride of Oak and one should be called Cranky Rock. They have called it Cranky Rock 1 and 2. We were pleased when that came up in stage one of the feasibility study. Stage two of the feasibility study is now happening. I am on the community reference group and the customer reference group. We have one meeting of both, so it is ticking along. There are obviously people above Canowindra that are going to be directly impacted by the dam and they are against it. I say to them they should wait until the feasibility study and the science come in and then we will get off the gloves. I say to them, "Let's be friends until the feasibility study makes a decision."

The CHAIR: Earlier evidence commented about the potential impacts of flood mitigation being that the recharge of the alluvial aquifers may be affected. On Mr Curran's property we saw that he pumps from shallow alluvial aquifers. Do many of your 54 members use much pumping?

Mr PAYTEN: A percentage pump from bores, and it is a good backup. We have a small bore, which probably equates to about 20 per cent of our irrigation. Of the 54 members, maybe half have bores.

The CHAIR: Are there test bores up and down the river monitored by DPI?

Mr PAYTEN: Yes, there are.

The CHAIR: Are you aware of any data that shows the recharge rate at certain river levels or river flows?

Mr PAYTEN: I am not. During the worst of the droughts, when the river stopped flowing, the bores seemed to hold their own. Mr Curran's bore is in the Belubula aquifer; mine is actually in zone two of the Lachlan. I know from experience that my bore did not miss a beat but kept going through the driest times.

The CHAIR: Is there any conductivity between those two aquifers?

Mr PAYTEN: In theory zone two Lachlan is not connected to the Belubula. It is its own aquifer but how they decide which aquifer is which is a bit of a mystery to me.

The CHAIR: Even at zero water levels in the river, were groundwater levels holding?

Mr PAYTEN: Yes, certainly at my place. I cannot speak for everybody.

The CHAIR: How deep are your bores?

Mr PAYTEN: Only about 30 metres, pretty shallow.

Mr CURRAN: Ours are a lot shallower than that, and we do notice in drought times, when the river stops flowing, our bores do not yield as well as they would when the river is flowing.

The CHAIR: In your section of the river there is probably greater interconnectivity between the river and the shallower aquifers than further down.

Mr CURRAN: Yes, that is my understanding.

The Hon. RICK COLLESS: Mr Curran, I apologise for my absence this morning. I was looking forward to visiting your place and hope to get the opportunity to do so in the not too distant future.

Mr CURRAN: You would be very welcome.

The Hon. RICK COLLESS: In last year's wet season, I think you said there were some 13 flood events down the Belubula.

Mr PAYTEN: Yes, that is correct. It is a bit hard to judge because it was almost one constant flood. The flood peaked occasionally and those new peaks were measured as floods. It was like a never-ending flood, really.

The Hon. RICK COLLESS: When you talk about the flood mitigation value of a new dam on the Belubula, would that not be negated in a year like last year, when there was so much water around. The dam would have been full all of the time anyway.

Mr PAYTEN: Probably not because the biggest ever annual average flow measured at the Needles, which is above the dam site—I tried to get some data below the dam site but the data is a bit unreliable because it backs up into the Lachlan a bit so the flow stops; at our place we almost have Lachlan water coming back on to us—

The Hon. RICK COLLESS: So it is held up?

Mr PAYTEN: It is held by the Lachlan. But the biggest ever flow going past the Needles, I understand, was in the early 1990s and it was 500,000 megalitres. It would still only half fill the dam in the big flow like that. The 1,000-gigalitre dam is the biggest dam that they can build. I was surprised that there was a dam site that size. I think that is 402 metres above sea level and the lowest one they are quoting is at about 380 metres above sea level. That is a lot smaller dam. We dare to dream, but realistically any dam would be good at that site. Wyangala is 1,100 gigalitres and this potentially would be 1,000 gigalitres. People in Canowindra have said to me, "Where are these caves?" I said that they are private caves on private land above Canowindra and obviously they are of some environmental interest.

Most people have not been to the caves because they are not accessible to the public. I think the Orange Speleological Society visit them periodically. A lot of people say they are sick of things like the caves potentially putting at risk something this financially significant for the district. A dam would also be recreationally significant, because it would be half an hour from Orange. You cannot move Wyangala over Christmas because is full of thousands of people getting so much pleasure. I guess we would be trading that off against—

Mr CURRAN: A few people.

Mr PAYTEN: Yes. It is just a point of view.

The Hon. RICK COLLESS: I was going to ask you about your views on the caves, so thank you.

Mr PAYTEN: I have never seen them and I am probably part of 99.99 per cent of the population who have not.

The Hon. PENNY SHARPE: Just because you cannot see them does not mean they have no scientific value.

Mr PAYTEN: I am not disputing that.

The Hon. PENNY SHARPE: I think you are.

Mr PAYTEN: I think that the best outcome would be to save the caves if they can be saved. I heard somebody from the community reference group say that there is a dam height that would not risk the caves.

Mr CURRAN: At 600 or 700 gigalitres.

Mr PAYTEN: I am not sure, but that was stated by someone who is a supporter. He said there is a height that would not threaten the caves. That could be looked into.

The CHAIR: I make the point that all witnesses are here to present their own viewpoint, so go ahead and present your viewpoint.

Mr PAYTEN: Thank you.

The Hon. RICK COLLESS: Given the scientific rigour any dam would go through from an engineering perspective and an environmental perspective, surely any of those risks would be identified at the appropriate time during the process and that would lead to either a yes or a no as to whether or not the dam would go ahead?

Mr PAYTEN: Yes, I imagine so. That is what stage two of the feasibility study is about. I think geologists and other people are crawling all over the site now looking at all sorts of outcomes. Obviously, logic would say that if the water backed up to the caves it would go down. You do not necessarily want that. I am hoping that there is a happy medium—a compromise height that can keep everybody happy. I think stage 2 of the feasibility study is due to report some time later this year. If that gets a tick they start moving on with things. We did wait a long time for stage 2 of the feasibility study. We had stage 1 in 2014, and we kept being told that it was going to happen, but it only really got going this year. We feel that there were a couple of years where not much happened. But it is happening now, so we are grateful for that.

The CHAIR: Mr Curran, you were kind enough to offer to take some photographs for us. You had some photos that were taken during the floods and photos after. Have you been able to bring them in?

Mr CURRAN: Yes, I have. I am happy to offer those.

The CHAIR: Could you table those, please?

Mr CURRAN: Yes, I can.

Documents tabled.

Mr SCOT MacDONALD: Are you getting much opportunity to have input into that Belubula report? There seem to be two streams—the broader land studies and the business case studies. To this point have you had much opportunity to have any input?

Mr PAYTEN: In stage 2 of the feasibility?

Mr SCOT MacDONALD: Yes.

Mr PAYTEN: We did. We spoke to DPI before they set up the community reference group. Then we were invited to have a representative on the community reference group. That is where we are up to with that. That first meeting was excellent. Everyone was there representing their particular interest groups. I thought it was handled really well.

Mr SCOT MacDONALD: With respect to the point that Mr Veitch was talking about, I think we have to keep a very close eye on the economics of this.

Mr PAYTEN: Yes.

Mr SCOT MacDONALD: You do not want to be bushwhacked by $50 or $60 a megalitre.

Mr PAYTEN: That is true.

Mr SCOT MacDONALD: Otherwise it will end in tears.

Mr PAYTEN: That is right. I know. Obviously you cannot get those numbers before—

Mr SCOT MacDONALD: At this early stage.

Mr PAYTEN: That is right. It is a chicken and egg situation. We have to wait and see what the proposal is. Lachlan Valley Water have certainly taken that position.

Mr SCOT MacDONALD: What position is that?

Mr PAYTEN: They have taken the position that they want to know some facts and some costs before they go headlong into this. They said, if they put their hands up and say, "We are 100 per cent behind it," and find that they are going to be asked to pay those sorts of numbers then their members will not be interested.

Mr SCOT MacDONALD: So you are very cognisant of this.

Mr PAYTEN: We are. We know that we have to have some numbers around it. The Government has contracted something called the Balmoral Group to do the survey—

Mr SCOT MacDONALD: Is this about the willingness to pay?

Mr PAYTEN: That is right. That was sent out. I do not know how many people got it. I rang WaterNSW to ask if it was supposed to come to all of our members, because it certainly has not. I did not hear back from them. That was the day before it was due, so I am not sure what happened there.

Mr SCOT MacDONALD: You would have to be the key stakeholder. You are the ones who will be paying.

Mr PAYTEN: You would think that, yes, but it was a pretty generic survey. It asked all sorts of interesting questions.

Mr SCOT MacDONALD: Thank you.

The CHAIR: In fact, that is a question we might ask the water authorities when we meet them—whether all of the users were polled.

Mr PAYTEN: That would be interesting because I did ask a couple of my members the day before the survey was due, and they said that they had not received it by email.

The CHAIR: Mr Curran, have you received the survey?

Mr CURRAN: I have not; no.

The CHAIR: Thank you.

Mr CURRAN: I would like to make one other comment. The dam at Cranky Rock would provide a lot more water than just for the Belubula. The cost of it would not be justified if it was just for the Belubula.

Mr SCOT MacDONALD: No, it would be downstream.

Mr CURRAN: It would be for downstream, for other users on the Lachlan and the towns. Cadia mines is a big water user. So it would not be justified if it were for the Belubula users only.

Mr SCOT MacDONALD: Hopefully the economic study would capture that.

Mr PAYTEN: Absolutely.

Mr CURRAN: There is definitely a mine slated for Kings Plains. I think they own the land. The only thing they are waiting for is the water.

The CHAIR: We heard evidence from Centroc in that regard earlier.

Mr PAYTEN: I think it is Regis Resources. They are very keen to get a start but they cannot get the water flow.

The CHAIR: There are no more questions so I am going to shut the inquiry down. Thank you very much for agreeing to see us. Thank you, Mr Curran, for your hospitality this morning. We greatly appreciate it.

Mr CURRAN: You are very welcome.

The CHAIR: We will make sure that any questions on notice are sent to you in writing. If possible we would like responses in 21 days but if you are going to provide us with some real data we would understand if you could not quite make that.

Mr PAYTEN: We will see what we can do.

The CHAIR: The more help you can give us the better our report will be in terms of being informed.

Mr PAYTEN: We do not have any paid employees, we are all honorary, but we will see what we can do.

The CHAIR: We observed that this morning.

(The witnesses withdrew)

The Committee adjourned at 16:39