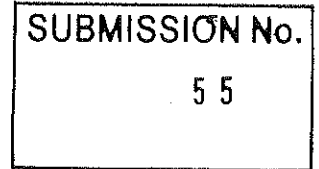


**The Waters Family
Primary Producers
"Sunnyside" 1314 Melba Highway
Yarra Glen Victoria 3775
Phone. (03) 9730 1316 – Mob. 0418 537 450
Email. watersbiz@bigpond.com**



The Executive Officer
Environment and Natural Resources Committee
Parliament House
Spring Street
EAST MELBOURNE VIC 3002
enrc@parliament.vic.gov.au

August 29. 2008

**Submission to the Parliamentary Inquiry
For Melbourne's Future Water Supply
Chairperson: - The Honourable J. Pandazopoulos**

Dear Sir/Madam

In response to the request for submissions to the above inquiry we submit the following comments and information: -

After making a substantial submission and presentation with my co-submitter Mr Jim Viggers to the North South Interconnector Pipeline PIA panel, our submission did not receive a mention in the Expert Panel's report Therefore, I hesitated to send my submission to the above inquiry, as the timing for the inquiry is out of sync with the work that is currently taking place on two highly controversial major projects to Supply Melbourne with water.

However, on reflection I decided to complete our submission, trusting that the inquiry is "Fair Dinkum" and not a "Smoke Screen" to divert attention while work proceeds on the two current water projects.

Our submission to the PIA consisted of: -

- A)** The socio-economical devastation on the Foodbowl Families / essential food production and associated cities by taking additional water from the Goulburn River. For the savings published in the Foodbowl Irrigation Modernisation Plan Report cannot be substantiated.
- B)** The book by John Forrest MP, "Harvesting the Skies"
- C)** Mr Viggers presentation was based on his work with the Melbourne & Metropolitan Board of Works, where plans were produced to supply water to Melbourne from new works in the High Country Catchment areas East of Melbourne

SECRET
13 AUG 11
43770400 03070308 11

This submission to the inquiry is based on the following; -

1. Mr Viggers paper and letter to the Prime Minister.
2. The Book by John Forrest MP, "Harvesting the Skies"
3. The attachment relating to a segment from Landline dated 31/08/2003
4. My experience as the pilot of our company light aircraft over many years when flying to projects mainly in the Eastern States and to Western Australia. During these trips as a Class I instrument rated Pilot, I often flew through clouds where water droplets streamed from the aircraft, this water could eventually turn to ice if the freezing level was penetrated. These moisture laden clouds for some reason did not always produce rain. (A passenger on a commercial flight will often note that when the aircraft enters cloud water droplets can be seen on the windows and streaming off the wings and windows.)

This experience, plus being involved in primary production where productivity is dependant on rainfall, led me to follow up the subject of producing rain by inducing the cloud to release its moisture. I found that "**Cloud Seeding**" was used in a number of overseas countries to produce rain by inducing the cloud to precipitate by seeding it with small particles of suitable materials such as Sea Salt or Silver Iodide.

Countries that have successfully produced rain by this method include: - Israel, Jordan, China, United States, Mainland Australia and Tasmania.

Some six years ago as we were experiencing low rainfall, I wrote to the then Prime Minister and suggested that he initiate a programme of Cloud Seeding to assist our country maintain Food production. Unfortunately for our farmers and others that rely on water for their existence, the reply came back that he would pass my request to the appropriate department and in spite of a follow up through the channels no action was taken. Hence we now find ourselves in a critical situation in relation to Food Production and water supplies for our cities.

We are not alone in our realisation that the Science associated with "Cloud Seeding" will produce rain. The Governments of Queensland and now New South Wales have initiated trials of the process.

Why is Victoria lagging behind?

This low cost, sustainable and environmentally sound project could quickly be brought on stream as one of the alternative sources of "New Water" for Melbourne. Especially when Melbourne Water is looking to replenish Melbourne's diminishing Water Supplies by denuding the Murray Darling Basin Foodbowl of scarce water via the Goulburn River. Melbourne is planned to receive this water in year 2010/11 when abundant water can be produced in years 2008/9

Therefore I sincerely urge the Inquiry Chair and Panel members to acquaint themselves with the book Harvesting the Skies and submissions made to various Federal Parliamentary Inquires by Mr Aron Gingis MBA, Dip Eng. and visit the Australian Management Consolidated website,.

It is interesting to note that whilst areas east of Melbourne are currently receiving reasonable rains it is noted that the High Country catchment areas are not receiving the same amount.

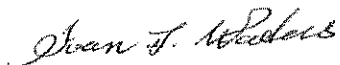
To ensure there is due science behind a Victorian Government's decision to embrace "Cloud Seeding" I understand that a Melbourne based scientists with expertise in the subject is available to travel to Israel and work in co-operation with a University in Israel. The University is said to possess world renowned expertise and facilities to produce a scientific based report on the subject including a finite segment directed to produce rain in the Victorian Catchment Areas.

I understand the work could be tabled to the Inquiry Chair and Committee prior to the date set for the Committee to report back to Parliament.

Furthermore, the report with specific tailoring to suit a geographic location could be shared with the appropriate Federal and Australian State Government Departments. And thus save Governments and taxpayers huge amounts that would be spent on infrastructure projects and purchasing irrigation water that could be utilised for food production to reduce our trade deficit and growing reliance on imported food.

I look forward to receiving your acceptance of this late submission.

Yours Sincerely.



Ivan. L. Waters
For The Waters Family.

Note 1: - The Waters Families involvement in Primary Production is carried out over an area of approximately 13,000 hectares in Victoria and New South Wales.

Note 2: - The submission to the North South Pipeline PIA Hearing was through our family company Millenium P/L

Note 3: - Funds will be sought to carry out scientific research into producing abundant low cost water by Harvesting the Skies

Attachment 1

Water Supply Options for Melbourne

Background Information

Resulting from the Parliamentary Public Works Committee Report of 1968 titled "The Melbourne Metropolitan Water Supply Inquiry" the following works were authorised by Government.

1. Diversion of the Yarra Tributaries namely Armstrongs, McMahons , Starvation, Cement and Missippee Creeks.
2. Construction of Cardinia Reservoir
3. Construction of the Thomson Dam and associated tunnel to divert water to Upper Yarra Dam.
4. Construction of a diversion Weir on the Aberfeldy River at Donnelly Creek and tunnel to divert water from that source to Thomson Dam.
5. Construction of the Lower Yarra Scheme which resulted in the Sugarloaf Reservoir, Winneke Treatment Plant and Yering Gorge Pumping Station.
6. Construction of Watsons Creek Reservoir. This was to be filled via a tunnel connected to Sugarloaf Reservoir with the two storages operating as one.

With the exception of the diversion of the Missippee Creek, the Aberfeldy River and the construction of the Watson Creek storage and associated tunnel to Sugarloaf Reservoir all these works were implemented and completed by 1983.

At the time of the 1968 report the Aberfeldy River diversion at Donnelly Creek was considered to be capable of supplying approximately 90,000Ml to the system in normal years. This required the construction of a diversion weir on the Aberfeldy River and a tunnel to Thomson Dam of about 4 kilometre length.

Today, commitments to maintain appropriate environmental flows in the river downstream of the diversion may be higher. Any diversion from the Aberfeldy could also impact on flows available to the Maffra/Macalister Irrigation District.

The land required for the construction of the proposed storage on Watson Creek, which was to have a capacity of some 350,000M, was purchased by the then MMBW. These works have not proceeded.

As a result of the water supply strategy prepared by the MMBW in the late 1970's into the future water needs of Melbourne (this was updated in the 1980's) it was determined that there was insufficient water available from the Yarra River to fill both Sugarloaf and Watsons Creek Reservoirs. A reduced capacity reservoir on Watsons Creek was therefore proposed of some 100,000Ml. In normal years it was considered that there was sufficient water available from Maroondah Reservoir and the Yarra River at Yering Gorge to supply these storages. I believe Melbourne Water has retained the land required for this smaller storage.

The O'Shannassy River upstream of the reservoir has an annual average yield of approximately 100,000Ml. In the early 1990's works were carried out on the dam wall with the placement of stabilising fill on the downstream embankment and construction of a spillway to bring the storage up to latest engineering design standards. These works also removed operational restraints that had been in place in respect to rise and fall of this storage since the floods of 1934. The restraints resulted in wasting of water from the dam to ensure its stability.

In 1993 the O'Shannassy Aqueduct was abandoned. This limited the ability to maximise utilisation of inflows into the reservoir to about 65000Ml and hence annual flows above this amount are

wasted. In addition, the abandonment of this aqueduct also resulted in loss of the water resource available from Cement Creek. It had been diverted into the system in 1967 and its water was harvested utilising this aqueduct as the conveyance to Silvan Dam.

The combined loss in harvestable yields from these sources totals some 45000Ml approximately.

The Tarago River system, which historically supplied much of the Mornington Peninsula, was abandoned some years ago and all supply to this region is now from Cardinia Reservoir. Cardinia is an off river storage filled from Silvan Dam which in turn is filled from the Upper Yarra/Thomson Systems.

The Tarago River is capable of supplying about 20,000Ml; associated works to secure this water include a water treatment plant.

Included in the options to augment the supply of water to Melbourne in the water supply strategies referred to above were proposals to divert water from the Goulburn River System.

These were-

1. Diversion of the Big River, a tributary of the Goulburn upstream of Eildon Dam, into Upper Yarra Dam.
This entailed the construction of a diversion weir at the confluence of the Big River and Frenchman Creek and a tunnel through the divide, approximate length 14 kilometres, to the Walsh Creek arm of the Upper Yarra Dam.
2. Diversion of the Black River, a further tributary of the Goulburn upstream of Eildon Dam, into Thomson Dam. The details of this I believe to be similar in respect to construction requirements as referred to in respect the Big River Diversion above.

The volume of water available from either of these options was considered to be of the order of 80,000-100,000Ml.

Comments

I have alluded above to a number of sources of water available to Melbourne (at least equivalent in total volume to that currently proposed 75,000Ml), from south of the divide which I believe should be harnessed before embarking on taking water from the Goulburn.

If water must be taken from north of the divide the realistic options are the diversion of the Big or Black Rivers. Either of these can supply at least the amount proposed with the obvious advantage that it puts the water into the upper end of the supply system to Melbourne, that is Upper Yarra Dam. From this storage the water can gravitate to the downstream distribution system without pumping. It has the further advantage of long term storage of the water and hence minimal treatment of the water is required to meet potable water standards.

These options also have the added advantage of minimal environmental impact as the works would be located in forest with the only disturbance being at the diversion and outlet ends of the works; there would be no requirement for compulsory acquisition of freehold land or interference with private enterprises. The greatest advantage to my view, in this accepted time of global warming, is they do not require the use of energy, no creation of Greenhouse gases to further pollute the environment.

The works currently proposed divert water from the Goulburn River downstream of Eildon Dam into Sugarloaf Reservoir. It entails construction of some form of diversion works on the river at Killingworth with a low lift, high volume pumping station to store water in large tanks at the site.

The water is then to be pumped with a high lift, high volume pumping station to transfer the water to Sugarloaf via the proposed pipeline. So we have two long-term energy consuming facilities. Added to this, is the further pumping required to take the water from the Sugarloaf Reservoir to the Winneke Treatment Plant before distribution via the Clearwater Reservoir to Melbourne. Further, all water from Sugarloaf Reservoir is fully treated to meet potable water standards. This entails clarification and filtration.

A further disadvantage of the proposal is it places the water at a low level in the supply system. That is – the level of Sugarloaf and the Clearwater Reservoir is at 178 AHD hence it commands a very limited part of the overall water supply system without further pumping, whereas Upper Yarra Dam is at 366.4AHD and commands the whole system.

In essence, both the Big and Black River diversion options put the water into Upper Yarra Dam.

Apparently the diversion of the Black River is not considered by current management a viable option as the Thomson Tunnel, which is used to transfer water from the Thomson Dam to the Upper Yarra Dam, is deemed to be a weak point in the system. If this is correct one must wonder about the security of supply to Melbourne in respect to existing water utilised from this source.

It should be noted that following completion of construction of the Thomson works a maintenance manual for this tunnel was prepared and adopted by MMBW management. This specifies that a full inspection of the tunnel must be carried out at a minimal interval of 5 years. I believe that the last inspection was carried in 1990, some 18 years ago.

A further option, not previously contemplated in regard supply of water to Melbourne, which must be considered in conjunction with the above, is the construction of a storage reservoir on the Macalister River upstream of Glenmaggie Reservoir.

The streamflow of this river, that is located east of the Aberfeldy River, has its waters impounded at that storage. In years of average and above rainfall it is an underutilised resource with significant volumes of water being wasted to the sea as occurred in 2007.

Glenmaggie Reservoir has a storage capacity of only 190,000 Ml and is an irrigation storage supplying the Maffra/Macalister Irrigation District.

In addition to water being supplied to irrigators from Glenmaggie, water is also released from Thomson Dam for their use.

A second storage upstream of Glenmaggie would capture excess streamflow and reduce waste. It would be operated in unison with Glenmaggie making more resource available to irrigators. It would give them increased security of supply and reduce the volume of water required to be released from Thomson Dam for irrigation purposes making it available for Metropolitan use.

Whilst this, on its own, this may be insufficient to meet ongoing growth in demand to satisfy Metropolitan water requirements it must be included as an option in the decision making process.

J I Viggers

Attachment 2

518 Old Healesville Road
Yarra Glen Vic 3775

The Hon Kevin Rudd
Prime Minister of Australia.

Dear Sir,

This communication concerns the proposal of the Victorian Government to divert 75000 megalitres of water from the Goulburn River downstream of Lake Eildon into the Sugarloaf Reservoir at Christmas Hills to supply water to Melbourne.

I believe I am qualified to make these comments and that they are of substance having had a career of 35 years as a Civil Engineer and Senior Executive with the MMBW (now Melbourne Water). Some 24 years directly involved in the operation of the water supply system and 14 years responsible for its operation as Manager Water Supply- Headworks and Distribution. In this role I was accountable for the harvest storage and distribution of water to Melbourne and had significant input in the planning, design and construction of works. The attachment titled 'Water Supply Options for Melbourne' gives background history and water resource alternatives available to Melbourne which have minimal environmental impact when compared to the current proposed works.

The Sugarloaf pipeline proposal is high in energy consumption and hence creation of Greenhouse gases with the water having to be pumped a minimum of 3 times and fully treated prior to distribution to consumers.

Since coming into government I applaud you on the signing of the Kyoto Protocol and your proposal to set Greenhouse emission targets, yet, we have a State government going in the reverse direction with a proposal that is extremely high, initially and on an ongoing basis, in the creation of these emissions. You would be aware that most of Victoria's power is generated from the use of brown coal.

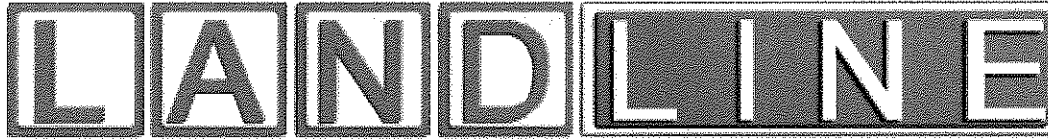
I trust you will give my attached paper your earnest consideration and encourage you to use the environmental powers entrusted to the Federal Government to reject the Sugarloaf Pipeline proposal.

Yours faithfully,

James I Viggers

Cloud seeding by John Forrest, MP

AUSTRALIA'S NATIONAL RURAL AFFAIRS WEEKLY



ABC TV
Sun Noon
Mon 11 am

Search for cloud seeding

In farming communities and governments over the scarcity of water, the cloud seeding is back on the agenda with supporters claiming they now have the spread and reliable rainfall.

Snowy Hydro Authority has this month told the Federal Government that cloud seeding is the most effective way to generate water vital to restoring the once mighty Murray

scientific body, the CSIRO is far from convinced.

Over the past few years Federal politician John Forrest, has been scanning the skies for masses of promising clouds still sweep over the parched paddocks of his Mallee but bring no rain. And no relief from the drought, which grips Southern Australia.

"When we see these clouds are classic drought clouds, we've been watching them for decades. In our electorate, there's moisture up there, but I now have confirmed science that says that rural Australian are so badly impacted by aerosols and so many other particles of pollution from cities and power stations that the moisture in the air, has got too many options to find a sufficient molecule to form a rain drop, that is now confirmed science," John Forrest in Mallee said.

Cloud seeding is a remedy. He advocates cloud seeding. Artificially inducing clouds to produce

elicits some emotive responses.

"We shouldn't be fiddling with God's plan which is fine, I believe in that principle, but inadvertently, not deliberately, we all drive motorcars, we all cause emissions to the atmosphere or another, which creates this pollution and makes our clouds so dysfunctional. God's given us some grey matter to try and figure this out," John Forrest said.

Scientists have tried to do just that. But Australia's peak scientific body, the C.S.I.R.O., is questioning the effectiveness of seeding clouds.

"The amount of funding available for research into weather and climate and so it's about how to where you would put your resources. At this stage the information isn't clear and that we should invest against other national priorities," Greg Ayers, CSIRO

discovery, Australia quickly embraced cloud seeding. For some thirty years the y used it extensively to bolster rainfall to generate hydro-electricity and valuable) was a world leader.

to the extent that people could have the confidence it was worthwhile investing mes," John Forrest said.

nged drought is fuelling a growing chorus wanting more scientific research ling the climate of southern Australia.

he House of Representatives Standing Committee on the Future of Water g well and truly back on the public radar.

ned from a scientific tour of Israel, is utterly convinced it's time to re-examine nhancement here.

t in Federal Parliament.

n though it's rained in our early winter, they're would be at least 13 million f water restrictions, so we're all in it, in the same boat," John Forrest said.

e Wimmera-Mallee system, the whole water system of the North-West of ampian Mountains, it's the largest channel system in the world, it's a hundred ping that now, but we haven't got ahead of the crisis of the storages, we got as of rain in the last month of so has brought that up to about 8 percent but d its customers are confronted with the reality that water has to be carted in isis point".

nade for a renewal of funding for cloud seeding on a fairly wide scale Darling Basin where the problem seem to be most severe. We have environments viding Range which are conducive to cloud seeding, we've done trial elf in 94-95 out of Tamworth, which in my view was an outstanding success, and : conducted many years ago in the Snowy Hydro catchments. Why aren't we 'stery to me," Ian Searle, Former Tasmanian Hydro Commission said.

experiments and oversaw cloud seeding operations across Southern Australia, s for Tasmania's Hydro-Electric Commission.

: it pay twenty times more than the cost to run the programme, I have no doubt in other environments where there are mountains producing clouds where rain v, hail whatever," Ian Searle said.

ions of minute water droplets. To fall earthward they need to join millions of rm of dust, salt from evaporated sea spray, sand or material from forest fires, ation.

small ice crystals on the surfaces of the cloud nuclei. When water vapour freezes vstals they become heavier and eventually fall as rain.

icles, which mimic this process.

anian conditions, mostly rain bearing clouds from the south-west coast, do suit

the same level of productivity over the continent, that's the issue that cloud seeding
in regions where the conditions are just right and they are in Tasmania, but they
inland, particularly as you move further north," Greg Ayers said.

Division of Atmospheric Research says the Division's focus is on the bigger picture,
finding solutions to climate change, climate variability and the impact of tiny
atmospheric aerosol.

to argue it's those very factors, which make a compelling case for cloud-seeding.

phenomenon, everybody knows about El Nino and it is documented way back well
we have a problem of changing cycles of weather anyway but I believe this problem
is exacerbated by industrial pollution throughout the world, not just locally and
processes are shutting off the rain forming processes in the clouds. This was well-
known in Indonesia when they were burning off vast tracts of forest land and the
smogging the clouds, effectively shutting off the rain forming processes. We were asked
to come here and get the rain started again. But that is one part of the problem," Ian

water restrictions and low milk prices John O'Brien has decided to quit dairying,
selling beef cattle. Diminishing rainfall in the past thirty years is also to blame.

is a period of lower than average rainfall and also at the same time a lower
rainfall events, instead of getting say fifteen mils in a change that comes through
to say five to seven mils and five to seven mils means nothing in grass
Farmer/Vic Farmers' Federation said.

prominent advocate of water reform. His farm is to the north-west of the Latrobe
and the coal-fired electricity industry.

clouds are coming from the South-West and between here and Sale, you'll often see on
the term, 'corridors of rain' and corridors of dryness and it's clicking in my mind
about the power-stations?' Because we've got three to the South-west of us. It
is incidental because we've gone into plain country, no other interference that
clouds as it happens in rainfall events," John O'Brien said.

clouds were borne out last summer with the visit of a prominent Israeli scientist.

he'd called here and in that range of 10-50 kilometres downstream of power stations
is a thing, we have a diminution of rainfall because we don't get the diffusion effect
of rain droplets out of the cloud formation. Whether we've got lower intensity
is the other factor, but definitely our effective rainfall has dropped off...well

the government has endorsed his resolution for the Federal Science Minister to put more
emphasis on what influences the weather of South Eastern Australia.

to get other appropriate bodies to look at rainfall enhancement programs because

in Israel and Texas, overseas have improved the rainfall in those areas but they 15-30 years back a lot of the research was flying blind, they target the clouds to seed, with the new technology that's available I'm quite sure that they can get one will rain, that cloud front won't rain, so put your effort into the one that's been said.

The scientific findings of his countryman Professor Danny Rosenfeld of Hebrew University and colleague William Woodley, have taken the guesswork out of cloud seeding.

They use satellite imagery developed by NASA and the Japanese Space Agency,

to advise good rainfall by advising State and Federal Governments, water authorities the

on how to seed and what cloud seeding material to utilise to maximise precipitation in the region, Australian Management Consolidated said.

Now given us the capacity to watch this happening. In fact Israeli scientists have comprehensively and demonstrated examples to me of different weather events where this is and it particularly west of Adelaide are the Grampian mountains which are the main weather system," John Forrest said.

He said he is a fan of Rosenfeld's work.

He said the Israelis. It is the mother of all inventions to be surrounded by hostile Arabs and that water that they're prepared to make substantial investment in research effort. So as is happening with their dust-ridden clouds coming from the West over Libya and coming across over the Mediterranean the clouds were able to heal themselves, so how is that? They went out there, took some measurements, made observations by satellite technology in terms of understanding clouds physics and they discovered that the way a cloud with sea spray in the clouds is actually a healing process," John Forrest said.

He said that it, 590 thousand cubic kilometres of rain falls on the oceans, the oceans are a vast natural cloud system. So they're now busy spraying their clouds with agricultural grade sea mist, using Dead Sea brine. They're using their Dead Sea, the saltiest sea in the world. This is pretty creative and that's the sort of creative research I'd like to see here in

They said they are using cloud seeding. Funded by State governments, water boards and the private sector, Texans spend \$11 million dollars Australian on cloud seeding programs. In Australia, cloud seeding programs have run continuously for 50 years.

He said that the impact of pollution on rainfall patterns.

He said that but it's not clear that patterns of pollution and patterns of rainfall have been shown to be related. He said that there's a major effect in Australia," Greg Ayers said.

He said that on cloud seeding in 1994. Some of its early experiments in Western Victoria and he said that he claims the trials were conducted incorrectly.

He said that critical of the CSIRO. He alleges some of its scientists now go out of their way to

idence at forums and before state and Federal authorities.

evidence that CSIRO are not approaching this science with the required
ut in the position, where we ourselves, feel very uncomfortable to work with the
oached them and asked them to work with us, for the benefit of this country,"

ientists to explain that to me, why the dramatic change in our weather outcomes
nd more convinced it's the result of industrialisation and man-made intervention
them from forming in a natural way," John Forret said.

led to Texas and viewed comprehensive weather modification programs there.
ing unusual rainfall patterns or trying to make Australia's arid inland into a rain
ustainable and reliable rainfall.

alians is to not be so defensive of this, which is what I've had for the last few
cause of some religious perception or a scientific embargo question, whatever
s because the rest of the world has left us behind," John Forrest said.

a's scientific community to embrace the issue and supply enough evidence for
g into rain enhancement programs.

: Board is one the few bodies enthused by his plan. Undeterred the Member for
n international symposium on the topic. At Forrest's request, the Israeli Science
ustralian counterpart proposing bi-lateral co-operation into weather modification

king sideways or downwards and very few are looking upwards and the clouds
water resources of the world and we need to be looking at how to capture a little
particular part of the country," Ian Searle said.

the fact we could be stealing someone else's rain or that we could be damaging
in some dangerous way. Well I say to that is, frankly, the southern half of the
ight, no-one's been getting any rain of substance," John Forrest said.

an be as critical as how much it rains. In rural communities there's a growing
of unusually dry years and a sense of urgency to better understand it.

v we have to alter our farming practices, the species of pasture we're growing so
lower rainfall seasons," John O'Brien said.

n water is passing by in the clouds above our heads, day by day, year in year out
falls out as rain, we would have a completely different view on what we should
ter resources available to agriculture, river systems, the environment and so on,"

a solution being offered so therefore we shouldn't panic by it. So yes I'm
ging debate, it's a scientific debate," John Forrest said.

erification hasn't been published in a way that can be independently reviewed,"

ge your mind on that?

ntific output".

stralian Management Consolidated
0419 873 182
f Atmospheric Research.

leral Member for Mallee Vic.

owy Hydro Limited

