

Hon Robin Scott; Hon Rick Mazza; Hon Robin Chapple; Hon Charles Smith; Hon Alannah MacTiernan; Hon Dr
Steve Thomas; Hon Jacqui Boydell; Hon Colin Tincknell

WATER SECURITY

Motion

HON ROBIN SCOTT (Mining and Pastoral) [10.08 am] — without notice: I move —

That this house acknowledges the important issue of water security in our state, and calls on the government to investigate the feasibility of constructing a pipeline from the north of the state to supply water to the south.

The most important element for human survival today is not food or shelter; it is water. No issue is more important to human life than the security of its water supply. This also applies to our state. It can be easy to forget how important water security is in our modern life when we turn on the tap and water comes out, but the first time we turn on the tap and we do not get water, we will get a bit of a shock. That is the way it is heading due to the lack of supply. As the representatives of the people of our state, it is our, and my, responsibility to ensure the security of water supply now and for the future. The land we live in is very old, particularly in my electorate, where the earth has been untouched for billions of years. Because of this, the groundwater is contaminated with arsenic, uranium and nitrates, and many of our remote communities are drinking this water today.

For the state's capital, Perth, water security is even more important than in many other cities. To paint this picture, let us first deal with some history: It is no secret that Perth is dry and has always been dry. As far back as the 1920s, irate voters in Western Australia managed to convince the government of the day to invest in a more reliable water supply, including the hills water supply scheme, which took more than 20 years to complete. Unfortunately, that was not enough, and we started to dam more and more of the streams coming off the Darling Range. We managed to also send some of the water east, to the wheatbelt and further on into my electorate, the eastern goldfields, which was even thirstier than the capital city. Having dammed all we could, in the late 1960s we turned our attention to underground water. The state's water utility began to add groundwater to the city's supplies, sourced mainly from the Gnangara mound in Perth's north. Compared with other potential water sources, such as piping water from the state's north, groundwater was easily accessible and, therefore, affordable. By the end of the 1970s, nearly half of the city's water supplies were drawn from groundwater reserves.

Around this time the people of Perth were introduced to something that we now consider an undisputed part of our daily lives—water restrictions. Initially the system was voluntary, designed to encourage people to sink their own bores and draw from the groundwater. It worked. Today, the Australian Bureau of Statistics estimates that about a quarter of Perth households have their own bore. But, guess what? Restrictions were later placed on bore water use. We also introduced a user-pays system, encouraged the use of water-saving native plants, and carried out countless education campaigns; yet, when we hit the 1990s, water security—after 70 years of action—was still a serious issue.

The millennium then hit, and for Perth the dry winter of 2001 delivered the lowest stream flows into the city's dams since the drought of 1914. Rainfall had declined by almost 20 per cent. Our water managers started to get nervous, particularly as Perth's population had reached 1.4 million. I think we all know what happened next. Our first desalination plant was announced in 2002, and built by 2005; yet groundwater reserves continued to fall, and consumption continued to rise as the city grew. We began to treat our wastewater and added that to the water supply. We then added a second desalination plant in Binningup—always on the back foot, trying to keep up. Two desalination plants south of Perth now supply nearly half of the city's water supplies.

The population of Western Australia is predicted to double in the next thirty years; that will be nearly five million people. What plans are in place for that increased water demand, in the context of ever-decreasing rainfall? The trusty Water Corporation is onto it—it is looking into a third desalination plant in Perth's northern suburbs. It seems that the government policy for Perth's water future is crystal clear: if we need more water, we just build another desalination plant. I intend to criticise this policy in my contribution today, before outlining the benefits of a possible alternative, because I am a firm believer that it is a case of the cons outweighing the pros when it comes to desalination, particularly when put next to its alternatives. Firstly, the desalination process requires a huge amount of electrical power. The Kwinana plant sucks 349 million litres of water from Cockburn Sound every day, of which 149 million litres is turned into drinking water. The other 200 million litres is returned to Cockburn Sound as brine. Imagine the power required to suck that amount of water out of the ocean, put it through a reverse osmosis process, and then pump the same amount of water back out again, whether it is fresh water or wastewater. There can be no argument that desalination is an expensive process.

I am told that the Water Corporation knew this and felt guilty, so it was subsequently arranged that a wind power farm, Emu Downs Wind Farm, would power the Kwinana desalination plant. Wind power—clean, unsightly, and totally unreliable energy, but I am not going to get into the unreliable energy debate here. Even the greenest of my friends here will acknowledge that if we had a water source that was not so energy intensive, Emu Downs Wind

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Farm power could be used to power something else—or, heaven forbid, even bring down Western Australian power bills. If people do not care about energy costs, maybe they might when they learn that desalination, and its energy costs, are hurting their hip pocket. They will find that, because desalination requires so much energy, those energy costs need to be factored into their water bills. According to figures published by the Western Australian Council of Social Service, between 2006 and 2013, the water bills of Perth households tripled. That was largely thanks to desalination power costs. Six years have passed since 2013, and since then our water bills have gone only one way. We might have expected these price rises to be justified if we were using more water, but the truth is that per capita water consumption has actually dropped substantially over the past decade.

More expensive water is only adding to the cost of living in Perth, which is already an expensive place to live. Western Australians are crying out about the cost of living, yet their cries fall on deaf ears. Speaking of costs, it likely comes as no surprise that these desalination plants do not come cheap. It is reported that the next plant will cost Western Australians much more than \$1 billion. At the rate these plants are popping up, we must look at alternatives. The primary by-product of desalination is brine, and this brine is pumped back out to sea. It sinks to the sea floor and wreaks havoc on ecosystems, spiking salt content and crippling oxygen levels in the water. Members may remember that in early 2008 the Kwinana desalination plant was shut down on two occasions due to reduced dissolved oxygen levels in Cockburn Sound. It may come as a shock to my friends directly opposite me, but I do care about the environment. If we can find alternative ways to be cleaner and greener for the same amount of effort, in whatever we do, we should do it.

Fortunately, I believe I have found the answer. WA is unique in many ways. We are perhaps most unique because of our size. We could comfortably fit all of France, Italy and Germany's land masses into our state. While the south of our state battles with its growing thirst, in the state's north we have more water than we know what to do with. We have large quantities of fresh surface water in our north, most of which flows into the sea. I am proposing building a pipeline from Lake Argyle to get water to Perth. This pipeline would head west past Halls Creek, Fitzroy Crossing, Derby and Broome, and then south west to Port Hedland. For those who do not know, Lake Argyle is not far from the Kimberley town of Kununurra. It is a massive, man-made body of water, containing the volume of 18 Sydney Harbours. From Port Hedland it would head south, through Newman, Meekatharra, Cue and Mt Magnet, eventually reaching Mundaring Weir.

I am well aware of a past feasibility study carried out in 2006. I am also well aware that 2006 was almost 15 years ago and that pipeline engineering, renewable energy technologies and trenching techniques have all advanced in the last 15 years. Recent information and research provided to me suggests that we need to revisit this idea urgently. For example, 15 years ago a five-kilowatt solar array on the roof would have cost \$18 000 and required at least 25 panels. Today, a five-kilowatt solar array costs around \$3 000 and requires only 16 panels on the roof. This is how far we have advanced in 15 years.

This pipeline would be buried, which would be a simple task with modern trenching techniques. It would be an expensive task, but this would be the way to go to protect the pipeline from cyclones and monsoon rains. The other advantage in burying the pipeline is that it would not interfere with migrating wildlife. We could even employ the Australian Army to survey an appropriate route close to the one I mentioned. This would be a corridor, not just for water, but a service corridor for the future—for future gas lines, communications and underground high-voltage transmission lines. The water pipes would be around 1.8 metres in diameter, and two would be installed side by side while the trench is open. This would allow for future expansion and maintenance in the years to come. I am not talking about the next year or the next five years; I am talking about the future.

To add to my plan, in an ideal world, I would have a second pipeline heading due south from Lake Argyle, following close to the Northern Territory and South Australian borders. This pipeline would pick up all the remote regional communities on the way through, which I believe would eliminate much of the kidney problems that are so prevalent in the remote communities. A pipeline half the size of the main pipeline would suffice. This would improve general health and save millions from the health budget. Eventually, the pipeline would reach Laverton and further south to Kalgoorlie. Then we could pump any excess water to Perth, if necessary, using the existing C.Y. O'Connor pipeline. In effect, this would give us a ring mains water system. As the pipeline progresses, we could have spurs leading off to other parts of the state, namely the coast.

The next part of this statement shows the viability of this project due to the lack of pumping costs. All pumping stations would use unreliable power, namely solar, wind and batteries, with gas or diesel generators for reliable backup power. This would be successful because the load would be constant and not cyclic. This would hopefully put a smile on the faces of the Greens. Each pump station would have two, three-megawatt pump motors, all controlled by a satellite, with each station communicating to the next station. This would allow the pressure and flow rates to remain the same. The main arguments against this pipeline is the cost of pumping. With the correct use of renewable energy, we can pump the water at no cost.

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The benefits would be numerous. First, it would create jobs for many years into the future. The world would see that Aussie ingenuity can and will be successful in building the world's longest pipeline in history. The Mundaring Weir dam, after many years, could be filled with enough water to allow the Helena River to be flushed out the way nature intended. Eventually we could pump water down to Canning Dam, Wungong Dam and Serpentine Dam. All these dams have rivers that could be flushed out to allow them to recover, also the way nature intended.

When I am in Perth, I live 40 metres off the Canning River. For the last 20-odd years Canning River has had a poly pipe running the length of it. Dotted along the banks are oxygen plants. These oxygen plants are there so we can pump oxygen into the river to keep it alive. It is like putting a bandaid on a broken leg.

The feasibility study of 2006 looked at other ways of bringing water down from the Kimberley, including the cheaper option using tankers or towing a half-a-gigalitre bag. These options miss the key benefit of a pipeline, which provides water security for the entire western side of our state. Tankers would simply bypass our regional towns and industry, and only Perth would get the benefit. A pipeline travelling through the Kimberley could open up more land for food production. Mining companies would contribute to initial infrastructure costs and buy quality water for use in their camps and operations. All towns connected to the pipeline would no longer have to run remote bore fields or run reverse osmosis plants to make the bore water potable. I do not expect to see this fully functioning in my lifetime; however, this plan has to be progressed now to secure safe water for future generations.

I have estimated the cost for this project, but not in the same way the cost for the national broadband network was reached. The original NBN was to cost \$42 billion. So far it has cost \$120 billion. It is far from finished, and we will still have copper from the node to the house when it is finished. I have calculated that \$20 billion would more than cover the cost of this pipeline. When we think that \$13 billion was wasted on the Murray–Darling River scheme, which was a total, complete failure, that money could have secured our water future indefinitely. I know I will get no support from the Water Corporation, as it sees this as something that could weaken its stranglehold on the people of Perth. The federal government has billions of dollars available for such projects, yet WA has never applied for any of this money.

The problem with our democratic system in WA is that a government is elected for four years. As soon as a government gets in, it thinks about what it can achieve in four years so it can get re-elected in another four years. This system discourages big-picture thinking, it discourages long-term planning and strategy, and the WA people lose, election after election. This is because we no longer have statesmen in politics. We have professional politicians using math equations to make decisions based purely on the number of votes. What I am asking for is that the WA government make this an ongoing works project and each year allocates millions of dollars to this lifesaving idea to supply safe and secure water for future generations.

Before I conclude, I would like to thank the many members of the public who have expressed support for the pipeline and provided valuable information. In particular, I would like to thank a young university student, Prabisha Marsha Pradeep, who is in the public gallery this morning. Prabisha spent many, many months researching the feasibility of this plan, and her contributions are very much appreciated.

If it were up to me, I would be drawing up this contract today and the pipeline would be underway tomorrow, but that is not what I am asking for. If we will not commit to funding the proposal in full, then let us do it the usual government way and take baby steps. I have spoken to a large pipeline company that will charge \$50 000, plus GST of course, for a comprehensive feasibility study. Maybe we can take that \$50 000 out of the \$6.5 million already set aside in this year's budget to attract international students to our cashed-up universities. When we are talking about WA's water security for centuries to come, it is fair to say that the money would be well spent. I ask members to support my motion today, and future generations will thank them.

HON RICK MAZZA (Agricultural) [10.28 am]: It is certainly big-vision stuff to talk about bringing a pipeline down from Lake Argyle to the south west. Of course, this is something that has been floated on a few occasions. I think at one stage Ernie Bridge was very vocal about having water brought down from the north, and we all know that Colin Barnett had a vision for a canal, which did not go down too well for him at that time. Not so long ago, the South Australians tried to steal our water and have a pipeline or a canal to their state.

Blue-sky thinking is not something we should ridicule or dismiss out of hand. It was very interesting this morning reading the WA Museum's website about the Kalgoorlie pipeline, which I think was started in 1898 and opened in 1902. At that time there were only around 170 000 people living in Western Australia, so we did not have much of a population. There are a couple of quotes on the website from members of Parliament at that time. One member, G.T. Simpson, MLA, said on 26 July 1898 —

It was the height of madness to mortgage our future by imposing the debt of two and a half million pounds upon our small community for the one particular work.

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Also, F. Wilson, MLA, on 26 July 1898 said —

No government could be justified in pledging the credit of the country to provide the mines with water. The principle was wrong and unjust ...

At that point in time there was a lot of opposition to building that pipeline, but here we are, members, some 121 years later and that pipeline still serves the community and still delivers water to Kalgoorlie, Coolgardie and those towns along the way. Sometimes we have to take off the blinkers and look at what we can do to secure water.

We all know that water is the lifeblood of every single community and that if we do not have it, we will all perish. We take for granted that every morning when we turn on the tap for a glass of water or to make a cup of tea, the water will come out nice and clean and safe. We do not give it much thought, but governments and the Water Corporation certainly work very hard to make sure that we have a reliable water supply.

One of the things I learnt from being on the Standing Committee on Estimates and Financial Operations last term is that members do get a bit of an insight into each department as it comes in and get to see how the different departments are tracking from their annual reports. When the Water Corporation came in for hearings, I found it quite interesting to learn that our dam catchment now produces only around 14 per cent of the water supplied to the state. Hon Robin Scott referred to the desalination plants that are being built, which are very power hungry beasts, and produce clean water supply for the state. What is a little concerning about that, though, is that a lot of the water from desal plants is pumped to storage or holding dams like Mundaring and that over the summer months a lot of that water is lost to evaporation. We pay a lot of money to have the water desalinated, but after it has been pumped into storage dams, a lot of it is lost to evaporation. There are also hydraulic wastewater systems in the northern suburbs in which wastewater is pumped in at one end and, many kilometres down the road, fresh water is hydraulically lifted. It is hoped that over time the wastewater will be cleaned up so that we can create a clean water supply that way.

The fact is, though, that water security is not just an issue for metropolitan Perth. Building a pipeline to the south west might provide reliable water sources for metropolitan Perth and some regional towns, but getting out to the regions is very important. We cannot rely on water from Lake Argyle to produce broadacre cropping or get to grazing lands so that it can be used to water stock. There are lot of challenges ahead.

It is really concerning to hear that a town like Denmark, which has some of the highest rainfall in the state, now requires a pipeline to be built from Albany to supply it with water. I do not know what is going to happen at Albany over time either as that water is required.

Hon Colin Holt: You need to build more dams.

Hon RICK MAZZA: We probably do need to build more dams. At the moment, the Manjimup water wars are going on, so it is a hot issue. We see a lot in the national media about the Darling–Murray system and what is going on over there, which is very controversial. But Western Australia also has its own water supply challenges. The Manjimup region is, of course, predominantly agricultural. Unfortunately, over time, a lot of suspicion has built up in that area between the Department of Water and Environmental Regulation and landowners. I do not know how that will be sorted out, but that could go on for some time.

Hon Alannah MacTiernan: Do you support that southern forests scheme?

Hon RICK MAZZA: I am not going to pretend that I am an expert on the whole thing. I have been listening to the community there. It is not in my region, and I do not know enough about the actual scheme, to be honest, minister. But it is obvious that a lot of work needs to be done as far as consultation is concerned and to build trust and clear guidelines, because there appears to be a lot of suspicion and uncertainty around those projects.

Hon Alannah MacTiernan: But just to be clear, that suspicion is between the various grower parties; I think that's where the suspicion lies.

Hon RICK MAZZA: There is suspicion that lies amongst growers and DWER. But I do not want to take anymore interjections on that because there is a lot more to cover in the few minutes I have left.

As we move into summer, some water deficient areas have been declared in the state, which the minister is well aware of. Some of them have not really had enough rainfall this summer to be able to adequately supply water, so there are some challenges ahead.

I will come back to the metropolitan region and the Water Corporation in general, which pipes water out to all sorts of areas, such as Narrogin and Lake Yealering, through its pipelines. I also mention the 2014 Auditor General's report, which contained some very interesting comments and conclusions. One interesting thing in that report is that we lose around 30 billion litres of water each year to leaks in the pipework—30 billion litres is a lot of water to be lost just because of leaky pipes. I understand that a lot of it is hard to detect because a lot of the pipes are

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underground. I am not sure what the Water Corporation is doing to try to minimise that, but I think that we could be working to save water in some areas by simply putting in better infrastructure. The Auditor General's report indicated that there is \$81 billion worth of infrastructure assets within the Water Corporation. Work could be done in that area. There are hundreds and hundreds of kilometres of pipework that the Water Corporation has to look after, so there will always be leakage, and there is a world tolerance amount for leakage in pipes. I think there is a net 30 billion litres lost, but that is going back to 2014, which is some time ago. I do not know how that is going for the Water Corporation at this point in time.

Certainly, water security is important. I would not dismiss out of hand blue-sky thinking, like a canal or pipeline or some means to get water down from the north. We are looking at an increased population in the state. I think the last figures I looked at were that the state's population by 2042 would be around 4.5 million, which is close to double the population of the state now. There will be some challenges in the future in water security and providing water for the state. I am sure that better minds than mine will work out how we will do that, whether it is by building more desal plants, hydraulic wastewater systems or dams—as Hon Colin Holt indicated—although with a lowering rainfall, how successful that will be only time will tell. However, it is certainly not something that we should dismiss out of hand. We should look at the Kalgoorlie pipeline and the resistance to that being built 121 years ago because it was suggested it would bankrupt the state. The fact is it is still there today, it still serves the community and it still provides water to the eastern goldfields.

HON ROBIN CHAPPLE (Mining and Pastoral) [10.37 am]: Members will have to excuse my voice today; it has a sort of aged lustre to it.

I stand today as a person who lives in the Kimberley. I am mindful of the variance in how water is deposited in the Kimberley, so I will not be supporting the motion. I also worked with Ernie Bridge many years ago, before I got into Parliament, on some of the pipeline issues and was heavily involved in the 2006 inquiry. It was one of those occasions when I got out of Parliament—that was in 2005—and had nothing to do, so I played around with this issue for a bit. Although Hon Robin Scott mentioned that costs have come down, I am mindful that a surface pipeline would cost \$1 million a kilometre and that a buried pipeline would cost about \$1.5 million a kilometre.

Having said that, one of the things that seems to be missing in this evaluation, whether it be the use of Lake Argyle or Fitzroy River water, is that the Kimberley has had a 25 per cent increase in rainfall but it is drying out because the rainfall is not annual; it is episodic. There is huge run-off and very little goes into the ground. People are able to drive to Kalumburu at the moment. That is normally impossible at this time of year. What we do have are major water events that are quite different. The Logue River Bridge was washed away last year for the first time ever, yet the river crossed by the Willare Bridge, which normally is almost full of water during the wet, is not full, because the rainfall has been coming in a different parameter.

I recently had a conversation with Jack Burton from Yeeda station who said, "We are getting 25 per cent more rainfall. That means that I can take 25 per cent more water out of the Fitzroy for agricultural purposes." I pointed out that in fact there is not 25 per cent extra water in the Fitzroy River. The same thing applies to Lake Argyle. With the expansion of Ord stage 1 and 2, there is a greater demand for water. Although water coming out of Lake Argyle is managed better than it used to be, it still requires management. Taking a significant amount water out of Lake Argyle would be a problem.

The member mentioned the 2006 independent review titled, "Options for Bringing Water to Perth from the Kimberley". We have to remember that John Howard did his own evaluation of it as well. The proposal that the member is roughly talking about is what we call the "Tenex" proposal; it has been around for a long while. Tenex is a major industrial corporation that deals with a lot of military stuff; that is its basic premise. I think I have a quote here from the Howard government about its assessment of Tenex; I will come back to that in a minute. Its assessment of the Tenex proposal was that it would cost five times what was proposed by Tenex. We have to remember that during the time of the canal, Norman Moore had this to say in a media statement —

... the proposal did not involve a dam on the Fitzroy River, but envisage the pumping of water from aquifers in the Fitzroy Valley which are replenished each time the river flowed.

That statement was made in 2005. When we did the 2006 study, we looked at all the different ways of getting water down to Perth and not one of them was economical. I want to turn to some of the costings. The costings will have obviously multiplied over the years, as will the cost of development. I did take on board the honourable member's mention of the use of solar power, but to get water from the Kimberley to anywhere is incredibly energy intensive. The options that were looked at in the study included floating a large bag of water out of Lake Argyle, up to Wyndham and then down the coast. Floating a big bag of water was actually the cheapest option. The next cheapest option was to bring the water down in ships. We are talking about a huge variation in the costs. The most expensive option was the pipeline and the next most expensive one was a covered canal. Both of those options involved the huge cost of pumping the water because we cannot just chuck the water in one end and have it come

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out the other end. Four or five quite large pumping stations would be required with an associated power station next to them—whether they be solar, wind or diesel powered or whatever. That is quite an expensive issue.

I want to see whether I can find the relevant quick costings that were done at the time. The one thing that seems to be problematic in all of this is the assumption that there is surplus water in the Kimberley, which is not the case economically or environmentally. Even trying to take water from those areas using the spigot systems that are being developed there has its own set of problems. We recently saw the sawfish issue due to the diminution of the water supply through natural processes—not necessarily from taking water elsewhere. We are going to have to be really careful with using the spigot system with Lake Argyle. Lake Argyle is the lifeblood of the Kimberley in the sense that it provides power and water to Ord stage 1 and 2, but it has this huge fluctuation in water availability going on at the moment.

I take on board what the member has said. I have been in this place since 2001 and we have had this debate ongoing since then. Every time there is an economic evaluation of the development of a pipeline, it just does not stack up. I do not like desalination, but desal is one-sixth the price of the best option for getting water out of the Kimberley and down to the Perth environs. I take my hat off to the young person who has done the member's study for him. I would ask her to go back and look at water availability because it is just not available up there. Thank you.

HON CHARLES SMITH (East Metropolitan) [10.45 am]: Let me start by offering my congratulations to the mover of this motion, Hon Robin Scott, on what is perhaps the most important environmental issue faced by Australia, if not the entire world—that being water security. It is damning—pun intended—that since Hon Robin Scott started talking, there has been so little interest from the major parties.

According to a story in *The Guardian* some months ago, the New South Wales towns of Dubbo and Tamworth were facing a water emergency within months. Growing Australia's population to around 43 million people over the next half a century, as projected by the Australian Bureau of Statistics, will be an unmitigated disaster for Australia's water supplies and our natural environment. Recently, *The Economist* ran a story on how overpopulation is straining the world's water supplies, with Australia likely to experience a severe water shortage by the middle of the century. Members may recall that last year, Cape Town in South Africa narrowly avoided the prize for being the first big city to run out of water. Water levels in the reservoirs supplying the city had fallen to below 20 per cent capacity. Members may recall that four years earlier, São Paulo in Brazil had been on the brink with its reservoirs reduced to around five per cent capacity. According to recent data, global water use is now six times greater than it was a century ago. It is expected to increase another 20 to 50 per cent by 2050. The volume of water used around the world is around 4 600 cubic kilometres a year. We are already near the maximum that can be sustained without supplies shrinking dangerously. A third of the world's biggest groundwater systems are in danger of drying out. The number of people living under severe water stress is expected to climb to as many as 3.2 billion by 2050 or 5.7 billion taking seasonal variations into account. This will happen in not just the poorer countries around the world—Australia, Italy, Spain and America will endure severe water shortages.

The main factors that will drive the continued growth in demand for water are population and climate change and our prosperity. In 2050, the number of people in the world is expected to increase from eight billion today to between 9.4 billion and 10.2 billion. Water scarcity is the elephant in the room of the population policy debate, which is perhaps why nobody wants to deal with it or talk about it. It is an issue with Australia's mass immigration that Big Australia boosters and policymakers conveniently ignore.

Last year, Dr Jonathan Sobels, who is a senior research fellow at the University of South Australia and author of a key 2010 report prepared by the then Department of Immigration and Citizenship titled "Long-term Physical Implications of Net Overseas Migration: Australia in 2050", stated, among other things, that Australia's water security is being placed at risk from endless mass immigration. The report states that we are coming towards physical limitations within our physical built and natural environments that will lead to compromises in the quality of life. Not only are our dams not filling, but also our groundwater supplies are not filling. The only options for government are to either restrict water use, which is what we are doing around Australia, or build more desalination plants. Can we as a society afford to keep building more and more billion-dollar desal plants? Desalination plants are very environmentally destructive and, as I have said, incredibly expensive, with the costs borne by the incumbent population. A recent article on The Conversation website noted the same —

The desalination plants were expensive to build, consume vast quantities of electricity and are very expensive to run. They remain costly to maintain, even if they do not supply desalinated water. All residents pay higher water rates as a result of their existence.

Modelling done by Infrastructure Australia in 2017 projected that household water bills would more than quadruple in real terms because of rising population growth, increasing from \$1 226 in 2017 to \$6 000 in 2067. The report also warned that the impact of these changes on household affordability could be substantial and lead to significant hardship. This trend is blatantly obvious to every Western Australian as the government year on year hikes the

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cost of living on water and electricity bills as residents pay for reckless population policies. Growing Australia's population to 43 million over the next half a century, as projected by the Australian Bureau of Statistics, will be an unmitigated disaster for Australia's water supplies and natural environment. It is time that state and federal policymakers acknowledge this fact. Here is a novel idea: instead of spending potentially hundreds of billions of dollars on pipelines, desalination plants and the like, how about not making the situation worse in the first place by importing tens of millions of people into Australia?

Hon Colin Holt interjected.

Hon CHARLES SMITH: Yes, looking into the future. Look at the ABS figures. Our population will be 43 million by mid-century. Australia's water supply problems will obviously be much harder to solve with 17 million more mouths to feed. None of this is rocket science; it is very simple. It is basic commonsense but, sadly, it is not so common among our policymakers and commentators.

HON ALANNAH MacTIERNAN (North Metropolitan — Minister for Regional Development) [10.54 am]: I thank the member for bringing forward this issue. All the members who have commented on the motion have rightly said that water policy is absolutely one of the most challenging issues in not only this nation but indeed internationally. A great deal of disruption and chaos is already occurring in the world because of a lack of availability of water. Indeed, there are many who argue that much of the crisis today in the Middle East, in Syria and those areas, stems from the increasing lack of availability of water and the destabilisation of societies that comes from that. I hope that members are thinking deeply about why we are in this situation. Of course, it is very clearly a result of the impact of climate change. Some would argue that it is the result of the impact of climate change enhanced by the way in which we have changed the landscape, which has caused more water to fall in oceans rather than on land.

I will make a couple of comments about the comments made by Hon Charles Smith. I agree that the worldwide population is an issue, with groundwater supplies collapsing in places such as Africa and in many Asian countries. A lot of charities have gone to those countries to dig more wells, but people continue to have more children and, in the end, that creates more of a problem rather than less of a problem. But I say to Hon Charles Smith that we could put up a barrier around Australia and say, "We're not having any more people", but, unfortunately, the billions of people around the world who will see the impact of climate change —

Hon Charles Smith: I do not advocate for zero migration.

Hon ALANNAH MacTIERNAN: The member is happy to advocate it?

Hon Charles Smith: I do not advocate for zero migration.

Hon ALANNAH MacTIERNAN: I am not talking about zero migration—reduced migration. What I am trying to point out to the member is that we will not insulate ourselves in that way because this is a worldwide problem and people will not sit there and die. They will get in boats or whatever and take action to go to other places. We have to be very mindful, if not from the charity in our hearts to our fellow man, at least with an aspect of enlightened self-interest.

I can remember when Ernie Bridge first put forward his proposal in the mid-1980s when the climate in the south west started to dramatically dry. We were all really excited. We thought it was absolutely fabulous and that Ernie was just the greatest. I will provide a piece of history that I found interesting. When Colin Barnett was part of the Court government in 1993, one of the first things he did was to wipe the idea of a pipeline from the north because he said that it was complete economic fantasy and would never work. He was right at that time, rather than when he subsequently appeared to change his mind a decade or so later.

In moving this motion, Hon Robin Scott referenced the 2006 report—quite clearly he has read and understood the report—which made a very clear economic case that the pipeline or the alternative of a canal or the alternative of putting water in giant water bags or ocean tankers, all of these, were vastly more expensive than building desalination plants. It was something in the order of five times more expensive to do the least expensive of those options, so why would we do that?

I was part of the government that decided to build the desalination plant in 2001. I pay tribute to Geoff Gallop who really drove it. When it started to rain the following year, people were saying, "We don't need it; the drought's broken." Geoff Gallop's vision was that this is not short term; climate change is actually long term. If we look at the data from the 1970s, we can see that we are in the midst of long-term climate change and we need a solution. The other states around Australia toyed with the idea but when it started to rain, they abandoned the idea. As Hon Charles Smith pointed out, a number of towns in New South Wales are actually running out of water. The water minister for New South Wales was telling me that they are sending trains full of water out to places like Dubbo. Desalination is an important strategy and an important part of this. I think Western Australia has been ahead of the curve in this regard, and that investment continues. Hon Robin Scott said that technology changes and that there are cheaper ways of doing things. That is true. We cannot ever say that something is true at this point and it will remain true forever. It is important to understand that the Water Corporation keeps updating those figures. The last

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review it did of the idea of a pipeline from the north was in 2018. The Water Corporation is constantly trying to keep those figures updated.

Hon Colin Tincknell: Did you say 2008 or 2018?

Hon ALANNAH MacTIERNAN: I said 2018.

At that time, the cost of the infrastructure was assessed at \$12.6 billion. One thing I will say for Hon Robin Scott is that he is one of the few people who have not advanced this project with an underestimation of the cost. I think he suggested \$20 billion. The Water Corporation's estimation is \$12.6 billion. Quite frankly, if we can achieve a similar result with a desalination plant at \$1.2 billion, I honestly cannot see why we would want to engage in an argument about this piece of infrastructure. I have watched the episodes of *Utopia* and I know that people love big nation-building things. However, I think if we look at the way information is delivered, we can see, for example, that we are moving away from big models such as the five or six power stations that used to operate in Collie sending power out thousands of kilometres in all directions. We are now moving to distributed energy networks and we understand it is important to have distribution right around the network. It is the same with computing and digital transmission. We used to have great big mainframes that became obsolete. As we became more sophisticated and developed this technology more, we understood that we needed distribution networks.

Arguably, the same principles can apply to desalination. As the member pointed out, technology around piping has improved, and I do not dispute that. More real is that the cost of desalination and renewable energy to drive desalination is dramatically falling. New desalination techniques are being developed all the time. Indeed, we are really interested in looking at projects that use desalination in many of those marginal areas in the ancient palaeochannels around the Ravensthorpe–Esperance area that have the right desalination availability. We are looking, for example, at how we might treat the Officer Basin.

Hon Charles Smith said that we have less and less water. As a planet, we do not have less and less water. In fact, more and more water is going into our oceans. Due to climate change, icebergs are melting and the sea level is rising, so, in fact, our oceans have more and more water. It would be nice if we could get more of it to come onto the land with rain. However, it is proving to be a challenge to get people to focus on how we need to do that, so desalination is part of the solution.

There is another part of the solution. I was very interested in talking to the New South Wales minister last week who said his government is now looking at recycling greywater to create drinking water in all the relevant country towns. Members may remember the great Toowoomba debate and how recycling greywater was resisted. People are now understanding that we are in a serious situation and we really need to start looking more genuinely at recycling options.

None of us can, of course, be in any way complacent about this because it is a big challenge. We always have to be on the lookout for big ideas. We are talking to the federal government about putting forward a series of projects that are quite different from each other, one looking at desalination opportunities in the ancient palaeochannel and another looking at the rehydration of land—of getting water back into the landscape and building the water retention capability of the land. Some members might be aware of the work being done by Peter Andrews in the eastern states and many others. People such as Andrew and Nicola Forrest are working at trying to slow down water use at Minderoo station by rehydrating the land and building up the soil carbon so that more of the water can be retained in the land in the soil. That is another project that we want to put to the federal government. Desalination can be used in some areas, and, in others, traditional crops and tree cropping, and we are looking at how we might develop soil carbon and the capacity to retain the water. That also has an impact on the microclimate within those areas.

We want people to keep coming forward with good ideas. We do not pretend the solutions lie in only one form or another. However, with the deepest respect, member—I know he has proposed this very sincerely and, like Ernie Bridge, he is deeply inspired by this big project—honestly, we have looked at it with complete thoroughness and we have continued to revise it. We do not believe that this could be justified in any way, shape or form. We also know that projects like this are increasingly opposed by people in the Kimberley who do not want to see their water taken out of their region. I was very pleased the member did not propose the Fitzroy Valley but proposed the Ord River. Even within the Ord, there are ambitious plans for the use of that water. I think it is important to understand also, as Hon Robin Chapple commented, how seasonal that rainfall can be. If we were to build a giant piece of infrastructure worth, in the member's view, \$20 billion, and in some years it did not work, the people from Perth and the south west could not walk away. They would not have water that year. We absolutely know that the member is well motivated and deeply inspired by this, but we do not believe in any way, shape or form that an economic case can be made. We urge people to start thinking about this whole notion of distributed water the same as we distribute energy and information systems.

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HON DR STEVE THOMAS (South West) [11.09 am]: Thank you, Madam President, for the opportunity to address the motion moved by Hon Robin Scott. Before I do so in some detail, I note the comments of Hon Charles Smith, who suggested that the major parties had ignored the water situation over a long period. In the two years that I have sat and listened to the government tell me things that I do not believe, that was probably the silliest comment I have heard so far. We went to an election in 2005 with this as a policy. It probably cost us the 2005 poll. The government is very interested in talking up its credentials with the first desalination plant, but it very conveniently leaves out the work done by the Water Corporation and Jim Gill under the auspices of the Richard Court government and the research that was done at that point, which reinforced and gave the numbers to the then Gallop government as it progressed the project. The major parties have been debating this issue ad nauseam for the 20-odd years that I have been involved. I do not know whether the honourable member either was not here or was not listening, but this has been a big debate. I remember being in the lower house with the then water minister, the late John Kobelke—a very honourable man—and having these debates, particularly over issues such as tapping the Yarragadee aquifer at that time. Paul Omodei, the then member for Warren–Blackwood, and I were amongst the marchers—it was one of my protesting years! We debated water policy ad nauseam. It was a particularly constant debate during that time. We debated whether Wellington Dam would fill and what use might be made of it. I was on committees. Half a dozen reports were done, most of which were a complete waste of time, but there we go. We had this debate. To suggest that the major political parties have not been talking about this issue is absolute nonsense. I had to get that bit out of the way first, because that just annoyed me.

I go to the substance of the debate today. Hon Robin Scott is obviously passionate about the north west and development. I was around for the election and debate about the canal. I was aware of the late Ernie Bridge's proposals. It was interesting that the Minister for Regional Development talked about the fact that the Court government did not progress it. My memory tells me that it was actually proposed under a previous Labor government, when Ernie Bridge was the Minister for Water Resources. Before we start talking about whether the next Liberal government built the damn thing, maybe we should talk about the investment put in by the Burke, Parker, Lawrence—have I missed one?—and Dowding governments in the meantime.

Hon Alannah MacTiernan: Member, I was merely pointing out how curious it was that Colin Barnett completely rejected the project out of hand in 1993 and then made it his central campaign feature in 2005. I thought that was interesting.

Hon Dr STEVE THOMAS: Let us be serious, minister; this debate goes back to the 1980s, when Labor was in power for a long time. Ernie's canal did not progress, but the debate goes back that far. That is how long the major parties have been serious about the issue of water storage. It is an important issue.

The motion talks about bringing water down from the north. I say this with all the greatest respect to the honourable member who moved the motion: the minister was correct when she talked about the costs involved and the problematic issue of how to bring that water down. I surreptitiously interjected on Hon Robin Chapple and said, "Isn't it all downhill?" It looks like it is high on the map and low at the bottom, but it is not. It looks so easy but it is not. I say this to those who propose bringing water down and who have not perhaps read the Appleyard report or the good economic analysis that was done in the period 2004 to 2007, a lot of which is available: when water goes down to the ocean from either the Ord River or, particularly, the Fitzroy River, which was the proposal at the time, there is already a canal that brings it down to the south west, called the Indian Ocean. When people talk about developing a canal or a pipeline proposal, they are competing with the business case of water going into the ocean and then being taken back out again. Funnily enough, we can suck it out down here—there is a flow that brings it down. That is what proposals have to compete against. To give the minister her due, proposals such as this have to compete with alternatives such as desalination. At the moment, the cost of desalination is substantially lower—it costs a fraction of the price to allow the ocean to bring the water down and for us to pick it up here and desalinate it than for it to be brought down directly.

That brings me to the critical point in the debate. Whether the proposal is a canal or a pipeline, the only way it would be economically viable to bring water down would be to massively expand development in the north and all the way down the pipeline. Billions of dollars of economic activity would have to be developed in the process of bringing the water down to make the proposal pay for itself. I do not think that is viable. It may not be viable into the future at all. I do not believe the highly optimistic population growth rates that are spouted. I have heard about massive growth rates for many years. We need to take them with a grain of salt, a bit like the government's economic modelling at the moment and its bold predictions of economic growth going forward—do not trust it. Population growth is a little the same. If people want to bring a canal or pipeline project to fruition, they will effectively have to shift a million people out of Perth and intersperse them along the pipeline to generate the economic activity that would make the project economically viable. We can compare that with letting the ocean bring the water down and taking the water back out. It is a social engineering proposal of massive, multibillion-dollar proportions. It would not be easy to deliver that. At this point, the proposal does not stack up economically. It is

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a difficult project. It would cost billions of dollars to shift that population so that it could produce the economic growth that would allow the project to turn a profit in the longer term.

That is not to say that, in my opinion, there are not additional water resources in the north that could be used. I will disagree only slightly with Hon Robin Chapple on his concerns about harvesting water in the north, and from the Ord and Fitzroy Rivers in particular. I think there is a water source available there for harvest. I do not necessarily agree that the proposed level—that is, thousands of gegalitres—is an appropriate measure. I do not think that giving hundreds of gegalitres to a single applicant is necessarily a wise use of that water. But let us have that debate over time. I am happy to have a debate about what I think would be a sustainable harvest of water. We need to look at, as we are, peak-flow harvesting, or groundwater replenishment harvesting effectively. That is the only way to do that. Nobody is suggesting at this point that a dam on the Fitzroy or perhaps a dam on the Ord is a suitable proposition, but I think there is some water available. The government, bless it, is doing some work and modelling on whether water could be harvested in a sustainable way from the Fitzroy River in particular. I think it can. I think we will get some good modelling out of that, which will stimulate economic growth in the north west.

I have never believed that the north west is going to be the food bowl of the world. We cannot suggest that the north west will be like the Murray–Darling system. The reference to *Utopia* was a very good one. I commend the episode that references the Ord to all members to watch, because it is a very good reference. The north west is not the food bowl of the world and will not be the food bowl of Australia. There is a very good argument for the strategic growth of agricultural and other industries in the north west in the electorate of my good friend Hon Ken Baston. I am sure he will support that growth over time to allow those industries to expand and to build an economic baseline for people in the north west. We have an argument over this, because I think if we took the billion or so dollars that have been invested in the north west and put it into water infrastructure in the south west, we might actually build a real food bowl. However, we will not get into that debate because Hon Ken Baston would have to stand up and give me a hard time. But the reality is that there is a resource available there that could be better and more strategically used.

Unfortunately, the business case does not stack up to pick up that water and bring it down to Perth. It certainly does not stack up at this point to propose a pipeline or canal as an alternative to the Indian Ocean bringing the water down, unless \$50 billion or \$100 billion could be put into building towns and industries along the pipeline and we had a massive immigration program so that we could build the economy and the project could pay for itself. To be honest, I struggle to see that happening.

HON JACQUI BOYDELL (Mining and Pastoral — Deputy Leader of the Nationals WA) [11.17 am]: I will make some quick comments on the motion. From looking at the Bureau of Meteorology website, there is no doubt that we are experiencing a drier climate. Even just the forecast for the next few months indicates that there will be higher than average temperatures and lower than average rainfall. A wealth of information on climatic conditions is on the Bureau of Meteorology website, which is interesting to look at in the context of this debate.

The 2006 report into the potential pipeline from the Kimberley down to the south was extensive and covered a lot of options and areas and alternatives. I also agree with the minister that it never hurts to revisit some of those projects and look at whether they will become viable into the future. I also agree with the minister's comments that this project has probably outlived its viability to be looked at. I also agree with the decentralisation of water, and that the mechanisms to have a distributed water network are exceptionally important in a state the size of ours. The thing I cannot get away from in being a member for the Mining and Pastoral Region is the distinct view of the people of the Kimberley about the water resource in the Kimberley. This relates to opportunities with not only the Ord but also the Fitzroy River. People there want to utilise those water opportunities and we should pursue those opportunities, because they also give long-term economic viability for Aboriginal people and our very remote towns of Kununurra, Fitzroy Crossing et cetera. I definitely support that.

I think that renewable energy is a way to utilise the growth of desalination as the way to go forward to provide water. There is no doubt that water is a challenge to our state. How we provide a water source to the people of Western Australia is a challenge to every government, and is a major underpinning principle of government: the people of Western Australia expect the government to take water security seriously. I do not doubt that any government in the past has not done that; they have all come up with different solutions to do that.

I was interested to hear the minister's comments on the conversations the state government is having with the federal government, and I look forward to some of those projects coming to fruition and coming to the table. There is no doubt about the minister's passion in this space, and I wholeheartedly support those endeavours. I wonder whether that is from an agricultural perspective or whether the Minister for Water is involved in that process, too.

Hon Alannah MacTiernan: We are both and we have both been involved in putting together a suite of projects, because we are saying that we need \$10 million of that \$100 million that is coming each year for WA projects. We are working on it together.

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Hon JACQUI BOYDE: That is good. That is a very positive comment from the government. I am very interested to hear about the progress of that and I support those projects coming forward.

I thank the member for bringing the motion to the house. Water security is exceptionally important to the people of Western Australia, and we should rightly have that debate and enjoy hearing the contributions of members and particularly the minister on the potential in this space. That gives us an opportunity to hold the government to account in delivering on that. The government should do that and we should support that. I thank the member for bringing the motion to the house and I look forward to the remaining contributions.

HON COLIN TINCKNELL (South West) [11.24 am]: I will be very brief as there is not much time. I want to look at the costs. If we go back over the years, we see that the costs were considered to be too expensive at \$5 per 1 000 litres to deliver water into Perth. Guess what? The marginal rate for water use is now \$4.97 per 1 000 litres. Obviously, things change and we need to keep an open mind about that. It has been good to listen to members' contributions here today.

Hon Robin Scott has raised a very tough issue and he knew that there would be some knockers about this project. However, he has shown the conviction that this is a discussion we must have. If we were ever going to sit extra time in Parliament, it should be for the discussion about water, water usage and water security in Western Australia because we have the biggest and driest state probably in the world. However, the water is there, and I want to give one example of that. I quote Singaporean businessman Mr Bruce Cheung in an ABC article of 11 March —

“The water [has been] there for a long time, it's just that they have never gone about dealing with it,” Mr Cheung said.

Only 5 per cent of land in WA suitable for irrigation is being watered ...

He said that the water is there but only five per cent of land in WA is irrigated. We are used to dealing with drought in Western Australia and our farmers have done a great job in dealing with it, but we must not close our mind to these ideas that Hon Robin Scott has raised. He has indicated that through the use of renewable power and energy, costs can come down. He has looked at that. He has had someone from the university look at the issue. Professor Kevin Bell, an agricultural scientist from Western Sydney University, has spoken about this business of water as challenging. People say, “Well, there is only one way to fix it.” There is not. There are many ways. Professor Bell says that this is a game changer. We can make those changes. We just need to challenge ourselves. Maybe we need to sit extra time to debate this very important subject. No-one is denying that we do desalination well in WA. We should be using more wastewater. We use about only 20 per cent of our wastewater and greywater, and that is one of the lowest rates in the developed world. We talked about irrigation possibilities in the Fitzroy River; we need to look at that. Hon Robin Scott has raised the issue that prices have changed over that time. What was possibly too costly years ago is now getting closer and closer. I do not think we should be closing our minds to a pipeline at some stage.

Hon Alannah MacTiernan: Desal costs have come down even more dramatically.

Hon COLIN TINCKNELL: Yes. However, other costs are involved in desal, and we also learned about the environmental costs. We must not close our minds. Desal has been good for WA. There is a lot of water in Western Australia. We do not do a good job of using that water and irrigating WA. The honourable member has given us an opportunity to debate a very important subject and I believe we need to continue this debate well into the future.

Motion lapsed, pursuant to standing orders.