

**REPORT ON IN-CAMERA PROCEEDINGS BEFORE**

**PORTFOLIO COMMITTEE NO. 5 – INDUSTRY AND  
TRANSPORT**

**INQUIRY INTO THE AUGMENTATION OF WATER SUPPLY FOR  
RURAL AND REGIONAL NEW SOUTH WALES**

**At Macquarie Room, Parliament House, Sydney on Monday 20 November 2017**

**The committee met at 6.00 p.m.**

**Published by resolution of the committee on 6 March 2018**

**PRESENT**

The Hon. R. Brown (Chair)  
Mr J. Buckingham  
The Hon. R. Colless  
Mr S. MacDonald  
The Hon. D. Mookhey  
The Hon. M. Veitch (Deputy Chair)



**MIKI ZAIDE**, Head of Strategic Unit Department, Israel Water Authority, before the committee via Teleconference, through interpreter

**NITZA LOWENSTEIN**, Interpreter, before the committee

**The CHAIR:** I will read some formal guidance, make the introductions and then we can proceed to getting down to some detailed discussions. I will let you know also that this hearing is being held in camera, which means there are no members of the public present—only parliamentary members, parliamentary staff, an interpreter, and Hansard who record our hearings.

**Mr ZAIDE:** Thank you.

**The CHAIR:** Miki, I will now proceed. Welcome to the inquiry into augmentation of water supply for rural and regional New South Wales by the Portfolio Committee No. 5—Industry and Transport. We welcome you to the Parliament of New South Wales. Your presence before this committee is a unique and exciting opportunity for which we are greatly appreciative. We thank you for appearing before the committee today and for assisting us with this inquiry. The inquiry is examining water demand and supply, the suitability of existing water storages, flood history and technologies to mitigate flood damage, and water management practices, including for environmental water.

Before we commence, I will make some brief comments about the procedures for today. The evidence that you give today will be transcribed by our Hansard staff. The committee usually publishes these transcripts on the committee's website and uses this information in its report. A copy of the transcript will be provided to you to review in case there is any information that you do not want published. We have an interpreter present, Ms Nitza Lowenstein. Is that correct?

**Ms LOWENSTEIN:** Shalom, שלום Nitza Lowenstein.

**The CHAIR:** Thank you. Ms Lowenstein will assist committee members and you, Miki, in case there are more complex issues that need to be communicated. I formally welcome our guest, Mr Miki Zaide, from the Israel Water Authority.

We had a presentation from two representatives of Mekorot approximately 10 days ago, who gave us some information on the background to Israel's water needs, the demand, the supply and how it is supplied. Generally speaking, the information they provided was from Mekorot's point of view. We are extremely grateful that you, representing your Government, could perhaps answer some further questions. All of the committee members have before us your standard presentation—The Israeli Water Sector: Challenges and Solutions. The committee members will have looked through that, and that will inform any questions they may wish to ask. Given that we have this presentation already from you, could you give us more background on what your department does in relation to water in Israel? What are your responsibilities?

**Mr ZAIDE:** Okay. First of all I want to thank you very much for inviting me to speak in front of you. In general, the Israel Water Authority is the regulator of the Israeli water sector, so we are the regulators of Mekorot, the municipal corporations within Israel and suppliers. My department is the planning department. We are responsible for handing out regional and national long-term plans. I am talking about regional long-term plans and master plans for the whole Israeli water sector. We have around 10 professionals in the department.

The way we work is that we outsource the planning work. We write the Terms Of Reference (TOR), mainly, and we outsource the projects of planning outside our department. That is the way we use them and we actually supervise those projects. We have steering committees and regular meetings with the planners in order to hand out proper planning. Some of the plans we do inside our department, like the master plan that you have seen. I do it with another person and I use some consultants as well.

**The CHAIR:** For what time periods do you plan? Is your policy planning done on a two-year, a five-year, a 10-year or a 50-year cycle?

**Mr ZAIDE:** We discuss this issue quite often. I always say that we need to implement our plan straightaway—tomorrow. The policy is tomorrow but the time horizon is 2050.

**The CHAIR:** Does your department have oversight from your Government? What input does your Government give to your department when you are developing your plans?

**Mr ZAIDE:** This is quite a challenge in Israel because at the moment, sometimes in other ministries the strategic plans are not ready. I take the most that I can from other ministries: for instance, from the Israel Central Bureau of Statistics I take population forecasts for 2050 and that is how we build our forecast. On top of their forecast I build my own scenarios.

The base scenario is according to the Central Bureau of Statistics. A challenge that we have, for instance, is the Ministry of Agriculture. They did not finish their own long-term plan so I cannot know the demand they are going to have in agriculture in 2050. They are preparing it at the moment. Maybe we need to update our plans as well, but we handed out our numbers to the Ministry of Agriculture and they are part of the Israeli Water Authority Council as a member. They can comment on the numbers and assumptions that we put in our plan. The answer is that I take whatever I can that is formal from the other ministries.

**The CHAIR:** Okay, thank you. I understand from Mekorot that Israel supplies water to some of your neighbouring countries. Is that correct?

**Mr ZAIDE:** Sure. We have an agreement both with the Palestinian Authority and the Jordanian kingdom. According to those agreements, we supply water. Other agreements were made after I updated our plan and they also increased the water supply above what was planned for. At the moment we are supplying more water than was agreed upon.

**The CHAIR:** Do those other jurisdictions provide you with forward data for what their needs might be out to 2050?

**Mr ZAIDE:** This is one of the challenges. I do not have the data directly from the Palestinian Authority but I have the trends of the past. I plan according to that. For the short term they do supply their demands. 30 per cent of the total increase in the year 2050 will be because of their demand. Thirty per cent is quite a huge amount of water that at the moment we are going to desalinate in our land for our neighbours' needs.

**The CHAIR:** In the documents you provided us with, you have a break-up or a pie chart for water consumption. I take it this is for the total amount of water that you produce. Agriculture requires 52 per cent of the total water. Is that percentage likely to stay the same out to 2050, or are you looking at an increase in agricultural water that exceeds the demand in, say, domestic supply? Can you give us an idea of how you see the break-up of the water demand going out to 2050, please?

**Mr ZAIDE:** Agriculture at the moment is around 50 per cent, as you said. In the future what we are going to do is that the potable water amount is not going to increase. All the effluents that we are going to have—because of the increase in the population. The agriculture will grow but only with effluents and saline water, not with potable water. If we are able to reduce the amount that they are going to consume in potable water, that is what we are going to do. In general, agriculture will increase the amount of water that it is going to use from 1.2 billion cubic litres today to around 1.8 in the future. The increase is going to be just in effluents. We have the scenario of population that we are going to have and the scenario of consumption per capita, so the increase is going to be only with effluents.

**The CHAIR:** There is just one other question for me before I pass questioning to some of my colleagues, who will introduce themselves when they ask the question. Miki, my name is Robert Brown. The question is again related to agriculture. Would you say that the amount of agriculture is determined by the amount of water that, according to your authority's forecast, will be available, or is the calculation done the other way round: Do you work out how much agriculture you think you will need and then plan to supply water for that particular agricultural output? How is that done?

**Mr ZAIDE:** Quite a complex question. We asked the Ministry of Agriculture to prepare their targets for agriculture. It is not ready yet. One thing that is a part of our work of thinking about agriculture for the future—it is quite complex because we do not know how much import of materials for food and export they are going to put in their plan—so I do not know how much agriculture is going to have in the future. At the moment what we are saying to the Minister for Agriculture is that we give you all the potable water that you use today and the increase will be with effluents to get to a supply amount which is equal to 1.8 billion a year. That is what you are going to have, so please plan if you want to give me other numbers. Also in terms of regional plans, it is quite complex because in regional planning, we need to divide amounts within regions and there are some regions that we cannot have plans for agriculture, like in the centre of Israel, and in some areas they want to have more agriculture, like in the south of Israel.

**The CHAIR:** Miki, I will now hand over to my Deputy Chair, who also is a Mick.

**The Hon. MICK VEITCH:** Miki, how are you? It is Mick.

**Mr ZAIDE:** Fine, thank you.

**The Hon. MICK VEITCH:** I would like to explore with you aquifers and how you undertake aquifer recharge in Israel. The first question is: How long have you been doing this? Have there been any problems?

**Mr ZAIDE:** We are quite the pioneers in recharging the aquifers and using our aquifers. We did that for few decades with plumbing and for centuries utilising springs and wells. Actually, we overuse our aquifers. Today, since we have desalination plants, we do not recharge the aquifers by putting water in it, but we reduce the pumping from the aquifers and this is how we recharge them. We supply directly from the desalination plant and we would use the pumping. At the moment, we are quite in a crisis in Israel because our reservoirs are quite empty. We had a sequence of drought years—much more than we planned for, especially in the north of Israel. The Sea of Galilee in the north of Israel used to be one of our main sources of water and now we are thinking of how to convey water to the north of Israel and to change the direction of the national carrier in order to supply water from the centre of Israel from desalination plants all the way to the north of Israel. This is quite a challenge.

But in general the aquifers are working quite well in terms of recharging. We have other problems of pollution, such as industrial pollution, which is also a challenge. We are trying to cope with nitrates, and other industrial contaminants. We are trying to reduce the amount. At the moment in the plan we are counting on the natural replenishment of the aquifers, but we reduce the amount because of climate change and other issues. We are not going to have the same average that we had in the past. We will actually reduce the forecast of the natural replenishment by 20 per cent—17 per cent, actually. Within the plan, some say it is not enough.

**The Hon. MICK VEITCH:** Miki, how much monitoring of the aquifers do you have to undertake?

**Mr ZAIDE:** We have a very great deal of monitoring in Israel. For instance, the Sea of Galilee is one of the most monitored lakes in the world.

**The Hon. MICK VEITCH:** Yes.

**Mr ZAIDE:** This is the only lake that we have the rest of the aquifers would have a lot of data and we try to monitor everything. Clearly, it is not enough because in terms of pollution in many cases we monitor and find contaminants. We have plans to advance the monitoring as well. In terms of pumping, some of the wells are online monitored.

**The Hon. MICK VEITCH:** So you have computerised monitoring.

**Mr ZAIDE:** Yes, some of it.

**The Hon. MICK VEITCH:** With regard to the pollutants and contaminants, how is that picked up as an issue for your water? What are you doing to mitigate that issue?

**Mr ZAIDE:** In some areas, we did not decide to take out the pollutants at any cost. We decided to do it according to our priorities. If it is in a very strategic place in Israel, the Government invests money from outside the water budget in order to do that because this is like a national goal to preserve the natural resources as strategic source. In other places, some wells were closed. If I remember right the number is around 20 per cent of the wells were closed because of some kind of contaminants. We take the decision when we want to rehabilitate the situation in the aquifers and in some places we only monitor.

**The Hon. MICK VEITCH:** My last question, which you may not be able to answer but I hope you can, is: As a percentage, how much of your water that you are using comes from the aquifer recharge?

**Mr ZAIDE:** First of all, in the last five years we do not see the multi year average.

**The Hon. MICK VEITCH:** Okay. Today we supply with all types of water around 2.2 billion cubic litres. So if we have the average of the natural recharge of water it should be around 1 billion. Around 50 per cent of the water today comes from natural recharge. We have got to have a lot of effluents and saline water, which is also partially from recharge and partially from water that has been there for centuries. We use 50 per cent other water than natural water. Already today we do not have enough water for all our usage. Fifty per cent we need to produce—what we call in Israel—artificial water. It is produced. Effluents and desalination are produced and natural water is only 50 per cent.

**The Hon. DANIEL MOOKHEY:** My name is Daniel. I want to ask questions about some of the economics of water. The first question is: Do you have a water trading market particularly in the agricultural sector? Are you able to take us through the pricing mechanisms? Is there an independent pricing authority that sets the price? If so, what are the key principles that that authority uses?

**Mr ZAIDE:** In terms of trading, we do not have trading, formal trading, that we manage within the Water Authority. I know that some farmers do that without asking us. I know that in the farmers' corporation, sometimes we allocate water for the farmers' corporation, and within the farmers' corporation, they trade between themselves with water rights. But that is not something that we regulate, as the main regulator of Israel. We thought to start thinking about it but we think the Minister of Agriculture is reluctant to do that because the big farmers will take out of the small farmers. I think it is only on the basis at the moment of an idea of checking.

I know that you do it very well in Australia and the United States, but we did not think of implementing something like that in Israel at the moment. I must say that we are very centralised in managing of water in Israel. Every farmer or farmers' corporation has their own allocation of water. We can reduce their allocation and take their allocation and give it to other farmers, if we want. By the way, we are doing that this year because we have drought in the north of Israel and we cannot supply them enough water. We will reduce some of the allocation next year in the north of Israel.

**The Hon. DANIEL MOOKHEY:** That is actually really interesting. Now having established that there is a cap on demand, particularly for farmers, how do you price the water? Do you, as the authority, set the price? If so, what principles are you using to determine what goes into the price?

**Mr ZAIDE:** This also is a little bit of a complex question. We have just now finished a huge reform in the pricing for agriculture. I will give you just a little bit of history. The Water Authority was established in 2007. It is quite a new body, just 10 years old. Before 2007 we were the Water Commission., In that period, we could not set up prices for agriculture. Since the year 2007, actually we can set up prices for agriculture. But the farmers, due to the strong lobby they have signed an agreement in 2007 with the Ministry of Finance and the Water Authority, and they had a formula for the pricing of water around Israel. It was not uniform between the regions. Some regions paid more and some regions paid less.

Just in the last few months a new reform was made, which is called amendment 27. Within this amendment, all farmers will pay the same price. From now on we have two prices: one for regions that are connected to the national carrier and the other price is for areas are not connected to the national carrier.

**The CHAIR:** On the back of the presentation that you gave us there is a table "Water Tariff Components—2016". Is that roughly the information that you were just about to impart to us? It states, "Average tariff \$US2.55" without a value added tax [VAT], and then it gives a breakdown of the costs distributed across the various wholesale recipients. In this table you have supplied you say 22 per cent of the cost component is "Mekorot Costs", which is \$US0.55. Is that the document to which you were just about to refer?

**Mr ZAIDE:** The prices have been a bit updated. In the past two years we have had huge pressure to reduce the costs. You are talking about the prices for domestic use. From what I calculated, the two block tariffs that we have today are around \$A2.46 at the moment for the low tariff costs, and for the higher block, it is \$A4.64. We have two block tariffs for the domestic use, which is used all over Israel. It is the same price for the end user.

**The CHAIR:** Miki, it is Robert Brown again. What are the differentiating parameters between the top block and the lower block? Is it the guarantee of security of supply? What is the difference?

**Mr ZAIDE:** Exactly. We decided that the first three and a half cubic litres per capita per month, the first half, would be in the lower block. This is the average base consumption for water needs. From the numbers that I know 70 per cent of the use of water is in the lower tariff. We need also to count the number of family members in order to calculate how much they need to pay per month.

**The Hon. RICK COLLESS:** G'day, Miki. My name is Rick. I have been to Israel, had a look at some of your water stuff over there and found it to be very impressive. Thank you in hindsight for that. I want to go back to what I think you mentioned—that 50 per cent of the water is from natural sources and 50 per cent is produced water. Is that correct?

**Mr ZAIDE:** Correct, yes.

**The Hon. RICK COLLESS:** Of the 50 per cent that is produced water, where does that come from? What is it produced from? Is it all effluent water?

**Mr ZAIDE:** Today we have seawater desalination plants. They produce around 585 million cubic litres per year. Today it is around 585, if you want to be exact, from five big desalination plants along the coast of Israel. Between 70 per cent and 80 per cent of the whole domestic use in Israel comes from those five big plants. Because of the drought that we have we want to build another three of them by the year 2030. I can talk about the data if you want to have more information about the future. The rest of the artificial use of water is effluents. Today we have around 450 million cubic litres per year of effluents that we supply mainly for agriculture. With the rise of the population along the years, we are going to have more effluents. We do not produce effluents yet it is outside of what is treated in the wastewater treatment plants. If you combine the number of effluents and desalination, we get to around 50 per cent of the total allocation.

**The Hon. RICK COLLESS:** Within the agricultural sector then, what percentage of that 1,122 million cubic litres shown in the graph is treated water or effluent water?

**Mr ZAIDE:** Sixty per cent. Forty per cent is potable and 60 per cent comes from effluents, and a little bit from saline water as well.

**The Hon. RICK COLLESS:** Virtually all the desalination plants that you have producing water, that water would be potable water?

**Mr ZAIDE:** Sure, yes.

**The Hon. RICK COLLESS:** How do you distribute that effluent water out to the agricultural areas? What is involved in that? It must be quite a network of distribution systems.

**Mr ZAIDE:** Okay. We have a huge supply system that was built in the mid-sixties, which we call the national carrier. It is the national carrier and it used to supply potable water all the way from the north of Israel down to the south of Israel. Israel is quite small so the whole national carrier is around 200 kilometres. Some rural areas have their own ability to pump water from their own groundwater and some agriculture gets water both from the National Water Grid and they also pump water as well. It is a combination of farmers who do not get any water from the grid and some of that you can unload from the grid. It used to be also different prices but now it is the same price. However in effluents the system is different – 30% are supplied by the Shafdan system to the south area of Israel and the rest is allocated by private farmers corporations that built the supply system with the assistance of government grants.

**Mr SCOT MacDONALD:** I am Scot MacDonald. Thank you for joining us. I am looking at the PowerPoint presentation printout. There seems to be a lot of energy shifting water, treated water and more desalination water going in. I saw an energy component there, but what is driving pumps of desalinators and all the rest of the works electricity-wise?

**Mr ZAIDE:** In the Israeli water sector, the energy consumption is between 6 to 8 per cent, of the total energy used in Israel. We use quite a lot of energy. Water is one of the biggest industry consumers of energy in order to supply the water. Because we are going to use more desalination plants there is going to be a little bit of increase in the energy that we are going to use in the water sector. It will not be a higher percentage because there will be a higher increase in electricity demand as well. I think it is going to be stable—between 6 per cent to 8 per cent used in water usage in general. We found, basically in the last decade, quite a lot of sources of natural gas along the coast of Israel. Electricity prices are supposed to be stable and even go lower than what we are seeing today.

**Mr SCOT MacDONALD:** What is the source of the generation now? A bit of gas, is there?

**Mr ZAIDE:** Yes, gas—natural gas. It depends on the hour and the season. It is not only gas. We use also coal sometimes in peak hours and also solar and petrol.

**The CHAIR:** Miki, thank you very much for giving us the information that you have given us. I have a couple of questions regarding the strategic importance of water to Israel. As you say, you do not quite have all the data at your fingertips because some of the agencies that need to supply inputs have not completed their data yet. But, generally speaking, will the increase of another three desalination plants—I take it probably in the next five to 10 years; I assume that is what you are talking about—cover Israel's water needs? I will ask the question in another way: To what point in time will that increase in desalination plants take you as you move towards 2050? Is the increase in desalination plants a 10-year plan or a 20-year plan? Where will it get you to?

**Mr ZAIDE:** The amount of desalination at the moment is 585 million cubic litres per year. I think one of the achievements of our plan is that we have already secured the land along the coast of Israel for around 1.8 billion cubic metres per year. It means that we are going to triple the amount of desalination by the year 2050—triple. We are going to be very, very much dependent on seawater desalination plants.

**The CHAIR:** In relation to that, what sort of sovereign rights does Israel have off your shoreline? In other words, do you have exclusive use of a certain distance off your shoreline? In Australia, what is called our economic zone is 200 nautical miles. Obviously, that is not going to work in the Mediterranean. Does that, and the fact that the Mediterranean is fairly heavily used, amount to strategic concerns related to tripling the water that you will use from desalination? Are there any strategic questions that need to be answered there? I will understand if you do not necessarily want to discuss that.

**Mr ZAIDE:** There are a few considerations. You are talking mainly because of the brine that goes to the sea?

**The CHAIR:** Yes.

**Mr ZAIDE:** The first desalination plant was built in 2005 and we have already 10 years of monitoring this desalination plant and we have other desalination plants that we built. The brine sinks because it is heavier than seawater and it sinks down. At the moment we do not see any damage to the environment. Of course it was a huge concern for all of us as well as for the non-government organisations [NGOs] and the Ministry of the Environment about the brine, but we tried to do our best in terms of monitoring. Actually, we do not have alternatives. It is not that we can use other technologies at the moment that will be affordable. We must do it, but we did not see any damage so far.

**The CHAIR:** Are there any further questions from any member of the committee?

**The Hon. RICK COLLESS:** No.

**Mr SCOT MacDONALD:** No.

**The CHAIR:** Miki, thank you very much for giving us your time. We really appreciate it. Your presentation, together with what we have received from Mekorot, give us a pretty good handle on the strategic importance of water in Israel and how your country has managed to get ahead of the curve. In other words, you have managed to keep technology and your policy ahead of what you might need to do. From that point of view, we offer you congratulations. I would have liked to have had some members of our committee over to Israel. You never know, in the next couple of years we might bring that off. In any case, thank you very much for agreeing to give evidence. Thank you very much also for your expertise, your openness, your frankness and your honesty. We will send you a copy of the tonight's Skype hearing and then you can tell us if you are happy for any or all of it being put on our website. On behalf of the committee, thank you very much.

**The Hon. MICK VEITCH:** Thanks.

**The Hon. RICK COLLESS:** Thanks, Miki.

**Mr SCOT MacDONALD:** Thanks.

**Mr ZAIDE:** Thank you very much. You are most welcome to come to Israel and visit.

**The CHAIR:** All right. I will tell our Premier that.

**Mr ZAIDE:** I will supply any data that you need. I will be happy to help you. Thank you very much for having me.

**The CHAIR:** Thank you and good night.

**Ms LOWENSTEIN:** טוב לילה

**Mr ZAIDE:** Good night. Goodbye.

**(Evidence in camera concluded)**

**(The witness withdrew)**

**The committee adjourned at 18.42.**