

## Questions on Climate Change and Energy Efficiency

17 October 2011

**Senator McKENZIE:** In an answer to question on notice No. 7 of the scrutiny of new taxes committee on 16 September the department, in replying to the question on notice, stated that the department was advised by the Office of Best Practice Regulation that a regulation impact statement was not required for the matters set out in the government's announcement on 24 February 2011. When was that advice given to the department and what were the reasons for that decision?

**Dr Kennedy:** I will have to take on notice the exact date when that was provided to the department and the OBPR would provide you with the answer as to the reasons for the decision. But I can take both questions on notice and obtain that information from the OBPR. There would be a record of the decision.

**Senator McKENZIE:** Okay. I would just like to refer you to the OBPR handbook which states:

In order to obtain the maximum benefit from the regulatory impact analysis process, the Australian Government has—

rightly—

decided that the RIS or BCC report must be prepared by officials ...

The bit that I want to draw attention to is this:

... but before a policy decision is made by the Government or its delegated officials that regulation is necessary ...

So my question goes to this. Was the government's announcement of a carbon tax on 24 February 2011 not a policy decision?

**Mr Comley:** There is a question as to whether it is a policy decision, because they were saying this is the framework on which policy would be contemplated. In fact, my recollection, without having the precise words in front of me, is that what that was announcing was the intention to have a structure of a carbon tax moving to an emissions trading scheme. Now my recollection is that the requirement for a RIS only occurs when you actually make a policy decision. That was an intention to consult on that basis. As Dr Kennedy says, we can get the OBPR view but the point is in the process we did consult with the OBPR about the need for a regulatory impact statement and the answer was that it was not required. I suspect it is because it was not a policy decision.

**Senator McKENZIE:** Because it had not gone to cabinet?

**Mr Comley:** No. That is not the distinction I am drawing. The distinction I am drawing is this. If you look back at the announcement on 24 February, it was that the government, in accordance with the Multi-Party Climate Change Committee, had settled on consulting on the basis that they would be looking at fixed price going to floating, but there were quite a number of parameters that were left open. So at the time it was that there would be, for example, within the framework—from memory—three to five years. That was open. There was also the question of whether you would transition from a fixed price to a floating price, so that was not a final policy question.

**Senator McKENZIE:** There did not seem to be any ambiguity in the statement about whether that was an option. I quote from the statement:

The two-stage plan—

I do not know when a plan announced by a government is not a policy—

for a carbon price mechanism will start with a fixed price period for three to five years before transitioning to an emissions trading scheme.

That is the quote. It sounds like a framework and a policy to me, but from your perspective you are saying that is not a policy announcement.

**Mr Comley:** I think you have to have sufficient detail about how the policy would actually operate to be able to determine the regulatory impact of it. I certainly think that until the announcement was made on 10 July there was not a full policy being announced. That was a framework with which to consult.

**CHAIR:** Mr Comley, we have heard some questions arising from the Senate Select Committee on the Scrutiny of New Taxes. Dr Parkinson appeared on 24 March 2011. On page 26 of the proof committee Hansard, he said:

... we did not believe the direct action program could be scaled. Ultimately those subsidies have to be paid for by someone, which means that either we have to raise taxes or we have to cut expenditure.

There is a figure of \$1,300 per family that has been quoted by government in relation to the cost of direct action. Could you just explain how that \$1,300 came about?

**Mr Comley:** In round terms I think essentially what you do is take the total cost of the program and then you divide it by the number of households to determine the cost per household. Then that cost would either be borne through additional taxation required to fund those measures or it would be borne by reduced expenditure on programs that ultimately benefit households.

**CHAIR:** So do you therefore agree with the Secretary of the Treasury when he says that you fix that problem by either raising taxes or cutting expenditure?

**Mr Comley:** This is actually the Secretary of the Treasury's area. He clearly would never choose to comment on areas in the climate change portfolio! There is obviously a third way you could solve this problem, which is to allow the deficit to increase or reduce the size of the surplus. Assuming you have the same fiscal targets, then you either have to fund that with increased taxes or reduced expenditure. That is right.

**CHAIR:** A Mr Fabian also appeared before the scrutiny of new taxes committee. Mr Fabian is from the Investor Group on Climate Change. Are you aware of them?

**Mr Comley:** Yes, I am familiar with the group and Mr Fabian.

**CHAIR:** They have funds under management of \$600 billion. Mr Fabian said to the committee: My view is that you cannot meet substantial emissions reductions on governments' balance sheets, especially in this phase of the global economy. So whether or not it is intended to be wrapped up early, we think it is not sustainable.

He responded in that way to a question I raised about Mr Turnbull's analysis that the best thing about direct action was that you could wrap it up quickly. Do you agree with that analysis of Mr Fabian?

**Mr Comley:** I think it is certainly the case that a program that is based on—

**Senator IAN MACDONALD:** Chair, a point of order: are you putting the officer in a position where he is asked to give an opinion?

**CHAIR:** I am asking him a question of fact in relation to direct action not meeting substantial reductions.

**Senator IAN MACDONALD:** You are asking for his opinion though.

**CHAIR:** No, I am asking whether that is a factual position.

**Mr Comley:** As we discussed earlier, some advice that we prepared was released last year, which indicated that, on the basis of the information we had at the time around the coalition's direct action program within the budget envelope that had been specified, around 40 megatonnes of reduction could be achieved and that was 120 megatonnes short of what is required for the five per cent target. That is what we have conducted analysis on and that is what has been put in the public domain in the past.

**CHAIR:** Mr Fabian went on to say.. if you pay some companies in the economy to reduce emissions, you are not necessarily impacting the emissions of other companies and so it is possible that emissions will grow enormously from sectors that are not touched by the direct action scheme ...

Is that consistent with analysis that the department has done?

**Mr Comley:** Where you have a scheme which is, by its nature voluntary, you will tend to only get emissions reductions from the areas of the economy that participate directly. Many will choose not to do so. The other issue that analytically you need to worry about is: if you have a scheme that gives payments as a difference between what people otherwise would have emitted and what they actually emit following a payment—which is the way direct action or offsets would work—you do run the risk that people seek to gain that system by artificially increasing their emissions to try and increase future assistance or payments.

**CHAIR:** Mr Fabian went on to say: that he did not believe... we do not believe a policy based on governments paying for abatement is a sensible long-term framework.

Is that consistent with the analysis from the department?

**Mr Comley:** I do in a sense take Senator Macdonald's interjection here. What I can say from a point of not what the ultimate policy conclusion is is that to seek to achieve abatement purely by government purchasing would turn out to be a very costly program. Whether a government decided that that was the appropriate thing to do would depend on whether it was prepared to bear that additional cost on the government books and then take the necessary actions to fund that. So I do not think I can definitively say as a matter of fact that it is unsustainable. It would only be sustainable if a government were prepared to commit very significant fiscal resources that would increase over time and to do that for a sustained period of time. If a government is prepared to do that then you can certainly purchase a lot of abatement but it becomes very expensive very quickly.

**CHAIR:** So it comes back to the argument of how you fund it. Do you do it by cutting programs, or do you do it by increasing taxes? They are the two options, aren't they?

**Mr Comley:** Yes, essentially if you do it on budget. Unless you want to increase the size of the deficit, you must increase taxes or reduce other expenditure.

**Dr Kennedy:** The other issue that Secretary Comley is going to is the enduring nature of the signal. It is also the governance or regulatory arrangements around which businesses can respond to an enduring signal to change their investments. I think that would be a well accepted, common understanding of how a policy would work to reduce abatement in the longer term. It has to be one that investors can see and respond to in changing their behaviour so as to reduce emissions and be confident that it remains in place.

**CHAIR:** During the new taxes committee, it was also argued that delays in implementing a carbon price and sending a price signal would mean a more expensive cost to both community and business in the short- to medium-term. Is that a proper analysis?

**Mr Comley:** That is certainly correct. There are probably two propositions here. There is a general proposition and then there is a specific one. The general proposition is that where you delay and people make investment decisions which are not informed by the future climate regime, including a carbon price, you do run the risk that some of those assets become unviable and you have effectively invested in something that is now not worth as much, and that is a costly thing to do. The specific issue at the moment is that there is uncertainty in the electricity sector, in particular, where people are making investment decisions to try to preserve as many options as possible. Minister Ferguson commissioned an investor group to look at the question in the electricity sector, and that report indicated that people are now tending to invest in open-cycle gas generation. It has lower capital cost but higher operating costs. They would not necessarily make that decision if they had certainty about the climate regime. That leads to higher overall costs in the system, which feeds through to higher costs to consumers while that uncertainty continues.

**CHAIR:** Can anyone here help me with the 2010 CSIRO report, Soil carbon sequestration potential: a review for Australian agriculture? It is an issue for outcome 1.1 and it goes back to the direct action plan that is a proposal from the coalition.

**Senator IAN MACDONALD:** I thought you just referred me to outcome 1.3 for scientific questions.

**CHAIR:** This is more about the cost and the capacity to meet this target. I am not asking for a scientific analysis here. The 2010 CSIRO report said:

Accurate monitoring and verification of soil C stock changes, due to the large and heterogeneous background levels are difficult and often prohibitively expensive ...

Is that something the department has considered when it looked at soil carbon?

**Ms Thompson:** As I think we are hearing this morning, one of the great challenges of soil carbon is these quite different views about how much abatement capacity there might be. I go back to Mr Comley's point earlier this morning, that it is important to bear in mind that there is a difference between the technical potential from soil—which is the abatement that is physically possible in terms of what the landscape can bear—and what might be possible in terms of people being able to change their farming and other practices. The key point there of course is what economists call the 'opportunity costs', in terms of what they might be giving up on the land to pursue activity to build soil carbon. Particularly in the case of the Carbon

Farming Initiative offsets scheme, there is a requirement that the practice will in effect need to continue because of the permanence requirement in the Carbon Farming Initiative that essentially says that sequestration that is built in the soil needs to be maintained for 100 years.

So I think we are at an interesting and potentially challenging point at the moment, because, although there are these different estimates of soil carbon and what it could deliver, we are really looking to the Carbon Farming Initiative itself to show what might be possible on the ground.

There is in fact a methodology that has been put forward to the Domestic Offsets Integrity Committee looking at how you could build carbon in the soil. That is being reviewed by the DOIC at the moment. The other point that I would make is that in order to resolve this question about how much potential there is in the soil and what practices can actually deliver that on the ground, the government has put in place the Carbon Farming Futures program, which is part of the \$1.7 billion contribution for the land sector that was part of the Clean Energy Future package. That program has \$201 million over six years for a range of research practices to help farmers and others—and particularly scientists of course—enter into research to investigate some of these things. The department of climate change has also received some funding to help translate this research into practical methodologies to look at how you can build carbon in the soil.

So at the moment there are a range of different views, and it is a combination of the Carbon Farming Initiative and these land sector measures that will help us answer the question in years to come.

**Mr Comley:** Ms Thompson is exactly right. The question was about measurement, and that feeds into what methodologies you can use. It probably is worth, if the committee wants to, to come back to Professor Steffen, who could be more precise on the measurement. My understanding of carbon measurement in the soil is that it can be done. Looking at a small plot of land, you can physically measure the carbon; that is not the difficult bit. The difficult bit is: how do you have a cost-effective methodology to estimate that carbon over a significant area of land with reliability?

It is exactly the same issue that we grapple with the National Carbon Accounting System where, in a sense, the underlying photosynthesis equation as to how you store carbon is well known, but then working out whether you have a particular soil type, a particular rainfall, a particular area is the difficult bit, which means that practically it can be quite hard to measure these things in a cost-effective way where you need to audit those things when you are providing a financial benefit.

**Senator McKENZIE:** Mr Comley, I just need a 'yes' or 'no' from you on this question. When the Prime Minister outlines a government plan to cut pollution, tackle climate change and deliver the economic reform Australia needs to move to a clean energy future and a rough framework about what that looks like—I want to know 'yes' or 'no' from you—is that a policy announcement or not?

**Senator Wong:** You cannot tell him how to answer the question. If he wants to have more than a 'yes' or 'no' answer he is entitled to it.

**Senator McKENZIE:** Fair call, thank you, Minister.

**Mr Comley:** I am not going to provide a yes or no because the context of the question is not just as a policy question, it is a policy question for the purpose of the requirement of the regulatory impact statement. Government can announce policy and that has varying degrees of specificity at different times, whether they give rise to the need for a regulatory impact statement is not the same thing as whether you might describe it as a statement of policy, particularly where there are a number of uncertainties intended to be resolved for a process of consultation.

**Senator McKENZIE:** So it may be, but not necessarily, under the criteria?

**Senator Wong:** The Office of Best Practice Regulation is in the finance portfolio, so you may wish to ask questions also of OBPR in the department of finance estimates. I think the example that Mr Comley gave earlier where we did have an outline of a policy announcement about which was the way forward, but there were a great many aspects of detail that would need to be finalised before you could finalise the RIS. For example there was no finalisation on the what is now the Jobs and Competitiveness Program. There was no finalisation on the electricity sector details. Those go directly to how business will be affected which is germane to the RIS. Obviously the RIS being regulatory impact statement. We are not trying to be difficult here. To go through the proper RIS process there would be an amount of detail which would not yet have been settled as at the time of the announcement.

### Questions on

**CHAIR:** I now call officers from the department in relation to program 1.2—improving Australia's energy efficiency—and I invite questions.

**Senator McKENZIE:** I wanted to ask a couple of questions about a contract notice that was amended on 23 September to increase the contract for phase 2 of the Home Insulation Safety Program. The amount increased from \$26 million to \$124 million. Was the contract for the increased value put out to tender?

**Mr Bowles:** The contract for phase 2 was done earlier in the year, obviously. When we put up the \$26 million figure you are talking about, it was only for the part of the contract that was let. We did not have a full cost or estimate of part B, if you like, of the contract, which was around the complex inspections. When we did get that we updated the AusTender site and to get it moving to the \$124 million figure.

**Senator McKENZIE:** Thank you. But I am still wondering: why are there confidentiality clauses in the contract?

**Mr Bowles:** There is a lot of commercially sensitive information to companies in this sort of business. The whole thing was put out to tender, and there was a part A and a part B. The part A was around finalising and just general inspections, if you like, and part B was around the complex inspections for certain homes. The biggest issue was: you sort of don't know what you don't know. The program is open until 30 June 2012, so we want to make sure that we are giving the best cost estimates as we possibly can, and hence we updated the AusTender site.

**Senator McKENZIE:** So the outputs are confidential within the contract?

**Mr Bowles:** No, Senator.

**Senator McKENZIE:** You have tendered for part A.

**Mr Bowles:** No, we tendered for parts A and B together. We did not know how many we were expecting in the part B of the contract. When we did, we updated the AusTender website. So part A was a much smaller part. Part B is obviously the larger part. Once we actually worked out what the cost for part B was, we updated the website.

**Senator McKENZIE:** Okay. Is there any information regarding the number of problems identified out of the safety inspections?

**Mr Bowles:** We released both the Booz and Co. report and the CSIRO report in April this year, which gave quite significant detail on the outcomes of the Home Insulation Program and the way forward from there.

**Senator McKENZIE:** Thank you. Do you have any idea what the final cost will be of the program?

**Mr Bowles:** Not at this stage, because, as I said, we go until 30 June 2012.

**Senator McKENZIE:** So you cannot be confident that the figure will not—

**Mr Bowles:** It could move around still. If, for instance, we get a flurry of activity on the hotline and people ringing up, we will deal with those issues. So we have got an estimate out there, obviously, that there is about another \$124 million to run on that particular part of the contract, and that is as best we can guess at this stage, based on the information and the rate of inspections that we are seeing at the moment.

**Senator McKENZIE:** Has the rate of inspections changed over time?

**Mr Bowles:** We have actually finished the major part of the contract now. So the commitment was to do 150,000 inspections. In fact, we have done around 178,000 inspections, which included 23,000 householder-initiated inspections. We finished that and we are now onto the complex side of the business, and there are about 15,000 of those that we will do between now and 30 June.

### **Questions on Solar Cities Program**

**Senator McKENZIE:** I want to ask a couple of questions about the Solar Cities program, particularly around the Bendigo and Ballarat community solar parks. I am wondering if you could outline how much the total is for those parks?

**Mr Cahill:** We will have to take that on notice.

**Senator McKENZIE:** Thank you. I am wondering how we measure the outcomes or how successful those programs were. They have been contributing back into the grid, I think, since 2009. I wonder what sort of criteria you have set up around measuring how successful those programs are.

**Mr Cahill:** We have a data collection strategy for the Solar Cities program. We use a range of methods—surveys, energy audits and trials, and even energy usage data from smart meters. That is feeding into a Solar Cities database. Over the coming 18 months or so we will be producing a range of papers reporting the outcomes of the individual Solar Cities and the program as a whole.

**Senator McKENZIE:** As part of that ongoing monitoring I am assuming it is culminating in the reports over the next 18 months. Have we seen any change in local behaviour in terms of an increased number of solar units being set up in those communities or other sorts of indicators that suggest that the local communities have seen a real benefit from those parks?

**Mr Cahill:** I understand anecdotally but I do not have the evidence with me.

**Senator McKENZIE:** Are we collecting the evidence?

**Mr Bowles:** We are collecting quite a bit of evidence from each of the cities. I do not have it to hand but we could provide that. One that I was aware of was Magnetic Island or somewhere up that way. They have done some work, because they had to put a lot of money into their infrastructure, and they have been able to defer the need for that upgrade because of the reduction in energy within the Solar Cities program up there. There are things like that that have happened that have demonstrated quite significantly.

Yes, the Magnetic Island one has reduced by 33 per cent from the business-as-usual levels. It means that a \$17 million investment in an additional power transmission cable can be put off for at least eight years. Overall energy consumption during that year was three per cent less than the previous year. There has been a 27 per cent reduction since the start of the project compared to business as usual. So it is things like that that this program will deliver quite significant benefits to the broader thinking in the policy space of energy efficiency over time.

**Senator McKENZIE:** I look forward to those answers. I was just wondering how much money the Community Power Conference in November 2011 was going to cost. How much money had been allocated to that?

**Mr Cahill:** We will take that on notice.

### **Questions on Bureau of Meteorology**

**Senator McKENZIE:** Is the bureau aware that there is no-one available outside of the emergency services to monitor the gauge located at Dergholm on the Glenelg River in western Victoria, even though the bureau is listed on the BOM website as the operating agency?

**Dr Vertessy:** I will pass to Dr Jayasuriya, who is the responsible officer in the bureau for that matter.

**Dr Jayasuriya:** In the past, the Dergholm gauge was actually read manually by a voluntary reader—a family who read it for the last 60 years but have retired now. We now have to look at an alternative way of getting the data from that particular station. There is a water-quality monitoring station a few kilometres downstream of the Dergholm gauge. That particular gauge is currently being upgraded by the Department of Sustainability and Environment, the local council and catchment management authority. It is currently going through the calibration processes and in the next month or so we will be able to get real-time data from that particular station and be ingested to the bureau system. We will be able to provide forecasts for the Glenelg Hopkins catchment from about the end of the month.

**Dr Jayasuriya:** The responsibility for automating the river gauges primarily rests with the authorities who are responsible for the stream-flow gauging stations. The Bureau of Meteorology is responsible for monitoring rainfall and we work in partnership with agencies in Queensland and in Victoria who have the responsibility for monitoring river gauges. I think they are in a much better position to answer that question on the river gauges. We work in partnership with them, but I am unable to tell you how many stations are currently being upgraded.

**Senator McKENZIE:** Given the severity of the flooding that occurred in January 2011, can you detail what steps are being taken to automate the existing gauges in Victoria and in Queensland?

**Senator McKENZIE:** Can you provide information on the process to upgrade them, not necessarily the number? I thought the first answer about how it was in the process of becoming automated was quite detailed.

**Dr Jayasuriya:** In Queensland there are about 300 gauges that are read manually by the bureau and there are other gauges that are also monitored by the department—and also in Victoria. We work with them, but it is really their responsibility to upgrade their stations. I am unable to provide a great level of detail about where the stations are currently being upgraded.

**Senator McKENZIE:** Since the floods in January in Victoria and Queensland, the Bureau of Meteorology does not know how many manual gauges have been automated?

**Mr Jayasuriya:** In Victoria the government has announced a grant to upgrade the river networks. Our original hydrology managers in Victoria, in partnership with the department, are working out the priorities for not only converting manually read gauges into automatic gauges but also refurbishing the ones that need new technology. There is a work program within the department of sustainability and environment. I am unable at this stage to tell you how many gauging stations are being currently upgraded.

**Senator McKENZIE:** Do you know now how many new monitoring gauges have been installed?

**Mr Jayasuriya:** No, I do not know how many new gauges have been installed. The priorities for setting new gauges are worked through the Victorian Flood Warning Consultative Committee, of which we are a member. As I understand it the Victorian government's allocation was announced a little while ago and the department of sustainability and environment is going through the process of working out the priorities of where the gauges have to be upgraded.

**Senator McKENZIE:** The bureau's status is the operating agency. You spoke about being in partnership with state bodies that are managing the rivers et cetera. What rivers are you the operating agency for?

**Mr Jayasuriya:** Right across Australia there are around 300 locations for which we provide flood forecasts. There are around 126 basins where we look at forecasting floods. Our role is to provide the river level forecast. We ingest the data, the rainfall and the stream flow, which are provided by third parties, and we do all the modelling work that is required. We work hand in glove with our partners so that we get a good insight as to what the weather is looking like. We then go through the modelling process and put out warnings, flood watches, minor, moderate and major flood warnings, and those are provided to the state emergency services as well as published on our website. The role of the bureau is very much forecasting river levels. That is the role of the bureau.

### **18 October 2011**

**Senator McKENZIE:** I would like to follow up the questioning from Senator Joyce about a particular system in my home state of Victoria. I refer to the figures that were reported in the

media on 15 September 2011. The in-valley figure for the Goulburn region, around Benalla, identifies 344 gigalitres as an in-valley reduction. When we look at the draft, it is hardly any different from the 349 indicated under the 3,000-gigalitre solution for local environmental assets for the Goulburn region. Why hasn't the figure for the Goulburn region changed when, after the guide was released, it was made clear that the economic and social effects of such cuts would be very severe, particularly in this region in Victoria, which is reeling from the social and economic impacts of local food processors closing and the like? I want to know why it has not really changed given how important it is.

**Ms Dickson:** In Victoria we adopted the recommendations of the Northern Region Sustainable Water Strategy, the NRSWS. We adopted those figures for the in-catchment reductions. The assessments being done by Victoria were very thoroughly researched and based, so we saw there was no reason to change those. They had also been through a significant process in Victoria, I understand.

**Senator McKENZIE:** So, despite wanting to look at the social and economic effects of the policy, you took that group from Victoria's word that the social and economic effects of taking that water out of the region and the system itself did not matter?

**Ms Dickson:** As I said to Senator Joyce, the two large changes we have made to address the social and economic effects have been to take from the lower end of the range, the minimal estimate—again, these are all estimates, which is why we are proposing a transition phase, so we can do a lot more work on these issues—and also provide a long period of adjustment, seven years, to be able to work gradually to these changes. But the work that was done by Victoria was to identify the sustainable level of take for that particular catchment, and that is the basis on which we also needed to act. We saw no reason to change the Victorian estimates.

### **Questions on Northern Victoria Irrigation Renewal Project (NVIRP)**

**Senator McKENZIE:** I have a couple of questions around NVIRP. I understand \$1 billion was committed by the Victorian government before the election last year to be used on stage 2 and there will be announcements this week about the rest of it going through. When will the agreement be finalised for the funds to be paid?

**Ms Harwood:** I understand that the announcement was made this morning of the package of initiatives around a restructured NVIRP stage 2. That is a total of \$1.2 billion. The contractual funding schedule for the main NVIRP stage 2 project was also signed this morning, so that is now basically a live contract for delivery of the stage 2 project. Also in preparation is agreement to fund an on-farm project totalling \$44 million, which is to be integrated with NVIRP2.

**Senator McKENZIE:** How much of that funding you just discussed is allocated for Victoria itself?

**Ms Harwood:** The project is entirely in Victoria. From the Commonwealth for the main NVIRP project there is \$953 million of funding agreed. Victoria is to contribute \$106 million.

**Senator McKENZIE:** Who will audit the savings of water from NVIRP stage 2?

**Ms Harwood:** There are quite rigorous processes in Victoria for the NVIRP project in terms of how the water savings are audited as the project proceeds. That is a Victorian responsibility to assess each part of the system as it is built and to assess the water savings that have been achieved. Then those are converted to water shares for transfer as to savings from the project.

**Senator McKENZIE:** Will the purchase price for the water to the environment be at the set value—and if so, what?—or at the prevailing market price?

**Ms Harwood:** Included in the package of elements for NVIRP is a water purchase transaction, where the Victorian government has offered for sale the second half of the water savings from the project to the Commonwealth. A price has been agreed for that transaction of \$219 million for 102 gigalitres long-term cap equivalent of water.