

## CHAPTER 14: HEALTHY ENVIRONMENT

### Key findings of the Committee:

- 14.1 Persistent drought conditions and responding to climate change are environmental challenges facing Victoria. At its Budget Estimates hearings the Committee was interested in the areas of water management, sustainable energy, climate change, the agricultural sector and parks in Victoria, all contributors to a healthy environment for Victoria.
- 14.2 Water management in Victoria is guided by the government's *Our Water Our Future* strategy. The 2009-10 Budget allocated \$389.4 million for Sustainable Water Management and Supply. The Department of Sustainability and Environment is responsible for this budget output and implementation of the government's water strategy.
- 14.3 The Government aims to achieve efficiency improvements through the modernisation of irrigation infrastructure to benefit all Victorians and the environment.
- 14.4 One of the claimed benefits of irrigation improvements is that additional environmental flows can be provided for natural waterways. The Committee has recommended that the government consider volumetric targets and reporting for environmental flows.
- 14.5 Victoria has large brown coal reserves which is driving Government investment in clean coal technology. The Government is investing \$132 million in the development of clean coal technology. Programs to reduce energy use are being targeted domestically and at schools, business, industry and government.
- 14.6 The government favours large-scale solar power generation over small scale installations of photovoltaic cells (i.e. on private homes). The Government has provided funding in 2008-09 to facilitate the future development of a large-scale solar energy plant, in which the Government has offered to invest \$100 million, subject to matched funding from the Commonwealth Government.
- 14.7 Climate change is a significant challenge for the agricultural sector and government policies responding to climate change can expect to have a major impact. The Committee considers that government initiatives and programs will have to combine adaptation and mitigation strategies. The Government's *Future Farming* strategy predominantly focuses on adaptation rather than mitigation.
- 14.8 The Committee recommends that funding for the Sustainable Practice Change output be increased to balance adaptation and mitigation programs within the agricultural sector.
- 14.9 Parks Victoria manages Victoria's parks to preserve the natural environment. The 2009-10 Budget increases areas of preservation and opens parks to greater public access.
- 14.10 The Committee notes the Government's \$4.5 million timber assistance package and River Red Gum forests and wetlands are to be protected through the establishment of four new National Parks. These parks should also improve environmental conditions within the Murray-Darling Basin. The efficiency and effectiveness of the package should be assessed against its objectives.

## 14.1 Introduction

At Budget Estimates hearings, the Committee asked 50 questions of departments to determine the Government's 2009-10 intention for achieving the *Growing Victoria Together* vision for a Healthy Environment. The number of questions asked represented 10.4 per cent of the total number of questions asked by the Committee. This is similar to the number and proportion of questions asked at the 2008-09 Budget Estimates hearings.

The Healthy Environment vision has two goals and at Budget Estimate hearings, the Committee asked 22 questions about the goal of protecting the environment for future generations and 28 questions about the government's goal of efficient use of natural resources. Four key areas of interest to the Committee from these questions were:

- water management;
- sustainable energy;
- climate change initiatives and programs for the agricultural sector; and
- funding for the development and establishment of parks in Victoria.

### 14.1.1 Challenges

The government faces two significant challenges in realising its vision for a Healthy Environment – ongoing drought conditions and the effects and response to climate change.

Departments were asked in the Budget Estimates questionnaire to identify '*key environmental issues that are predicted to have an impact on services delivered by the Department's portfolios in 2009-10*'. The majority of responses included climate change as the key environmental challenge. Water scarcity, drought and bushfires were also identified with some departments attributing these directly to the impact of climate change. Two departments identified particular challenges resulting from climate change. Human Services focused on the impact of climate change on the health and wellbeing of Victorians<sup>383</sup> and Transport identified the need to develop and implement a sustainable transport system.<sup>384</sup> The Department of Primary Industries also identified the challenges of increased environmental legislation and the need to ensure a skilled environment sector workforce.<sup>385</sup>

Climate change is the primary challenge for the government in achieving its Healthy Environment vision for Victoria.

## 14.2 Water management

Water availability and allocation is a critical issue for Victorians. The government's *Our Water Our Future* strategy attempts to balance low water availability due to ongoing drought conditions with demands for water by residents, industry and the environment. Initiatives to increase water availability and moderate demand are overseen by the Department of Sustainability and Environment and measured through the Sustainable Water Management and Supply output. This performance output was allocated \$389.4 million in the 2009-10 Budget.

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<sup>383</sup> Department of Human Services, response to 2009-10 Budget Estimates questionnaire, May 2009, p.14

<sup>384</sup> Department of Transport, response to 2009-10 Budget Estimates questionnaire, May 2009, p.12

<sup>385</sup> Department of Primary Industries, response to 2009-10 Budget Estimates questionnaire, May 2009, p.17

The Committee has considered the government's water management through analysis of budget initiatives targeting resource consumption (water savings and irrigation) and potential water recovery.

### **14.2.1 Water saving**

Water restrictions, intended as a short term response to critical water shortages, have traditionally been used to achieve water savings. Melbourne residents have had water restrictions in place since 1 November 2002. Melbourne is currently on stage 3a water restrictions. In parts of regional Victoria, including Barwon and parts of the Grampians-Wimmera-Mallee, residents are on stage 4 restrictions and in the Westernport region, Gippsland and East Gippsland all towns are on permanent water saving rules.<sup>386</sup>

Water saving through conditional water use is indicative of Victoria's critical water shortage and the need for new approaches to water supply and use. The government recognises that traditional sources of water are unpredictable and that behavioural change in domestic and business consumers, includes reduced dependency across industry and agriculture and increased efficiencies by all users are required to ensure Victoria's water security.

*Climate change and the ongoing dry conditions means the way Victorians value and use water must change forever. We are in a serious situation and every person, every day, can make a huge difference by adopting simple water saving solutions.*<sup>387</sup>

To foster behavioural change, the government has provided assistance to business and industry to save water, run water saving education programs and provided rebates to subsidise water saving measures taken by residents. The *Our Water Our Future* strategy was renewed in 2007.

### **14.2.2 Assistance to business and industry to save water**

The Government has implemented a number of initiatives to assist industry to reduce its water use. The Smart Water Fund, launched in 2002, facilitated the development of water resource management programs for business and industry. In 2007, the long term implications of water shortages were targeted through the *WaterMAP* initiative. The Government's initiative requires non-residential water users using in excess of 10 million litres per year to develop a Water Management Action Plan (*WaterMAP*). The Government provided \$2.25 million to roll out the program over four years.<sup>388</sup> In the following year, Environmental and Resource Efficiency Plans (EREP) were introduced. Organisations using more than 120 million litres per year are required to develop and implement a plan to reduce water consumption. In 2007-08 the Government committed \$1 million over four years to facilitate cooperation between business and industry and water authorities to develop and implement water saving actions. Funding for the program in 2009-10 totals \$300,000.

<sup>386</sup> Victorian Government, *Our Water Our Future*, Table of urban water restrictions – May 2009 webpage, accessed 5 August 2009, [http://www.ourwater.vic.gov.au/monitoring/monthly/archive/monthly12/water\\_restrictions2/table\\_of\\_urban\\_water\\_restrictions](http://www.ourwater.vic.gov.au/monitoring/monthly/archive/monthly12/water_restrictions2/table_of_urban_water_restrictions)

<sup>387</sup> Victorian Government, *Our Water Our Future*, Home & Garden webpage, accessed 24 July 2009, <http://www.ourwater.vic.gov.au/saving/home>

<sup>388</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.5

Smart water meters have also been installed at the 200 highest volume water use locations. The meters provide advanced real time monitoring of water use allowing business and industry to refine and monitor water saving plans.<sup>389</sup>

Further funding to assist business and industry save water is available through Regional Development Victoria's *Drought Industry Program: Water for Industry Fund*. Industry-specific funding includes:<sup>390</sup>

- \$1 million to assist best practice water use in commercial laundries;
- \$1.25 million to optimise cooling tower maintenance and operation; and
- \$3.9 million to upgrade hospital infrastructure to achieve water efficiencies.

The Committee heard from the Minister for Water that there is a '*popular misconception*' that industry is not reducing water use.<sup>391</sup> Water use by Melbourne's non-residential sector has reduced by 38 per cent per capita compared with averages in the 1990s. Approximately 8 per cent of the state's water is consumed by the urban non-residential sector which includes almost 3 per cent for electricity generation in the Latrobe Valley.<sup>392</sup>

The government has implemented a number of approaches to assist business and industry to save water. Budget funding and ongoing programs are contributing to the significant water savings being made by industry.

### **14.2.3 Water saving education programs**

Education programs designed to increase efforts to save water are an important part of the *Our Water Our Future* strategy. The Strategy uses education programs to achieve residential water savings and, through targeted information, change the behaviour of younger water users through school-based programs. The renewed *Our Water Our Future* strategy includes the following education programs:<sup>393</sup>

- the WaterSmart behaviour change program;
- H<sub>2</sub>OME: A guide to permanent water savings in your home;
- *Water – Live it! Learn it!* schools program; and
- a statewide advertising campaign to promote water projects and household water conservation.

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<sup>389</sup> Victorian Government brochure, *What is business doing to save water?*, accessed 7 July 2009  
[http://www.ourwater.vic.gov.au/\\_\\_data/assets/pdf\\_file/0009/2502/Water\\_Industry\\_brochure.pdf](http://www.ourwater.vic.gov.au/__data/assets/pdf_file/0009/2502/Water_Industry_brochure.pdf)

<sup>390</sup> Victorian Government, *Our Water Our Future*, Industry Water Savings Initiatives webpage, accessed 27 July 2009,  
<http://www.ourwater.vic.gov.au/saving/industry/initiatives>

<sup>391</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.5

<sup>392</sup> Victorian Government, *Our Water Our Future*, Business & Industry webpage, accessed 27 July 2009,  
<http://www.ourwater.vic.gov.au/saving/industry>

<sup>393</sup> Department of Sustainability and Environment, *Annual Report 2007-08*, October 2008, pp.42-3

At the Budget Estimates hearing, The Minister for Water said that:<sup>394</sup>

*The WaterSmart gardens and homes rebate scheme has been a highly successful scheme; \$20 million has already been spent on providing rebates to Victorians since 2003... Those rebates and the installation of the water-efficient devices and the other products that have been supported have saved something like 2.2 billion litres of water each year. We have seen 31,000 rainwater tank rebates; 9000 shower head rebates; and 2500 rebates for greywater systems. We have also seen something like just over 300,000 showerheads swapped for more efficient units over the past three years. The strength of all of those water-efficiency devices is that the savings they generate are embedded in our water management practice now forever. As long as those devices are installed in households or in businesses across the state, they will be generating savings and reducing the call on potable water supplies forever ...*

A feature of the *Our Water Our Future* strategy is information to help water consumers make educated choices regarding water use including the purchase and use of domestic appliances. Resources include:

- information on the Water Efficiency Labelling and Standards Scheme;
- facts and figures on the efficiency of appliances such as front-loading washing machines; and
- links to external websites (for example [www.savewater.com.au](http://www.savewater.com.au)) promoting water efficient appliances.

The schools-based program *Water – Live it! Learn it!* has been developed and implemented by Melbourne's state-owned water corporations. The education program is designed to incorporate water conservation into the curriculum of both primary and secondary schools. Complementing this program is the \$3 million *Schools Water Efficiency Program* that includes indoor water audits. Where an audit identifies potential water savings of at least 5 per cent, works such as fitting flow-control valve, fixing leaking taps and fine-tuning existing appliances and fixtures are implemented.<sup>395</sup>

#### **14.2.4 Water saving rebates**

The *Our Water Our Future* water strategy includes funding for the *Water Smart Gardens and Homes Rebate Scheme*. Funding for the program was extended for four years with an additional \$20 million from July 2007.<sup>396</sup> At 15 May 2009 more than 224,000 rebates had been approved. The Committee heard from the Minister that the installation of water efficient devices included in the rebate scheme have resulted in savings of approximately 2.2 billion litres of water annually.<sup>397</sup>

<sup>394</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, pp.9-10

<sup>395</sup> Victorian Government, *Our Water Our Future, Schools Water Efficiency Program* webpage, accessed 27 July 2009, <http://www.ourwater.vic.gov.au/saving/schools/swep>; Department of Education and Early Childhood, response to 2009-10 Budget Estimates questionnaire, p.23

<sup>396</sup> Environment and Natural Resources Committee, *Inquiry into Melbourne's Future Water Supply*, June 2009, p.91

<sup>397</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.10

The current rebate applies to eligible water saving products purchased between 1 July 2009 and 30 June 2011.<sup>398</sup> The 2009-10 Budget includes \$5 million for the rebate scheme and \$2.4 million in new funding for a water-saving retrofit program.<sup>399</sup>

The 2009 *Inquiry into Melbourne's Future Water Supply* by the Victorian Parliament's Environment and Natural Resources Committee found that '*rebates on water efficient products are generally supported as a cost effective way of helping reduce household water consumption*'.<sup>400</sup> The Minister told the Committee that the '*rebates program has provided a financial incentive for families to be able to access these devices*'.<sup>401</sup> The government has set a performance measure of approving 34,000 rebates under the *Water Smart Gardens and Homes Rebate Scheme* in 2009-10, 1,200 more than the expected outcome for 2008-09.<sup>402</sup>

### 14.2.5 Irrigation

Irrigation consumes 77 per cent of Victoria's water resources,<sup>403</sup> much of which goes to the production of food for local consumption and export. This is a major source of employment and income for the state. Victoria's '*ailing irrigation infrastructure*', which loses water '*through leaks, evaporation and system inefficiencies*',<sup>404</sup> has made it more difficult to supply the quantities of water required in a cost effective, efficient and environmentally responsive way.

The government is currently undertaking a two-stage renewal of Victoria's northern irrigation system as part of the *Our Water Our Future* strategy. The government aims to modernise irrigation infrastructure to improve efficiencies and ensure the viability of the irrigation industry.<sup>405</sup> Capital works are providing increased employment alongside improved service to farmers. The Government anticipates sharing efficiency gains from this project between farmers, Melbourne and the environment.<sup>406</sup>

Irrigation renewal is being delivered by the state owned Northern Victoria Irrigation Renewal Project (NVIRP). As part of the renewal project system losses in the existing irrigation system have been identified through historical data and past research. System losses and/or inefficiencies have been attributed by the Department of Sustainability and Environment to:<sup>407</sup>

- leakage from irrigation channels (25-30 per cent);
- inaccurate metering (20-25 per cent);
- evaporation from open channels and water storage (10-15 per cent);
- seepage (10-15 per cent); and
- spills or water release to prevent over-flowing channels (8-12 per cent).

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<sup>398</sup> Victorian Government, *Our Water Our Future, Eligible Products* webpage, accessed 27 July 2009, <http://www.ourwater.vic.gov.au/saving/home/rebates/products>

<sup>399</sup> Department of Treasury and Finance, Budget Paper No. 3, *2007–08 Service Delivery*, May 2009, p.327; Hon. T Holding MP, Minister for Water, Media release '*Water projects secure 2300 jobs and our water supply*', 5 May 2009

<sup>400</sup> Environment and Natural Resources Committee, *Inquiry into Melbourne's Future Water Supply*, June 2009, p.93

<sup>401</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.15

<sup>402</sup> Department of Treasury and Finance, Budget Paper No. 3 *2009-10 Service Delivery*, May 2009, p.213

<sup>403</sup> *Smart Water Fund, Introduction* website, accessed 28 July 2009, <http://www.smartwater.com.au/mainf.asp>

<sup>404</sup> Victorian Government, *Our Water Our Future, Government Programs, Irrigation Renewal* webpage, accessed 28 July 2009, <http://www.ourwater.vic.gov.au/programs/irrigation-renewal>

<sup>405</sup> *ibid.*

<sup>406</sup> Northern Victoria Irrigation Renewal Project, *Modernisation: Fact Sheet*, accessed 29 September 2009

<http://www.nvirp.com.au/downloads/modernisation-fact-sheets-may-2009.pdf>

<sup>407</sup> Northern Victoria Irrigation Renewal Project, *Modernisation, System Losses* webpage, accessed 28 July 2009, [http://www.nvirp.com.au/modernisation/system\\_losses.aspx](http://www.nvirp.com.au/modernisation/system_losses.aspx)

In addition to system losses the NVIRP has allocated 15-20 per cent for environmental maintenance of natural waterways forming a part of the irrigation system.

Funding for the first stage of northern irrigation infrastructure renewal is \$1 billion. Funding comprises of \$600 million from the State Government, \$300 million from Melbourne water users and \$100 million from Goulburn-Murray Water.<sup>408</sup> The government component is funded over six years, a breakdown is provided in Table 14.1.

**Table 14.1: Government funding allocation for stage 1 northern irrigation infrastructure renewal**

	2007-08	2008-09	2009-10	2010-11	2001-12	2012-13	6 Year Total
	(\$ million)						
Government funding allocation	82.0	84.0	135.4	134.2	82.2	17.6	535.4
Additional funding						64.5 <sup>(a)</sup>	64.5
<b>Total</b>							<b>600.0</b>

Note: (a) \$50 million from Victorian Water Trust and \$14.5 million from the environmental contribution levy.

Source: Department of Treasury and Finance, Budget Paper No. 3, 2008-09 Service Delivery. p.354

The Minister for Water provided the Committee with a complete funding breakdown of the NVIRP for 2009-10. Total funding is \$249 million of which \$154 million is from the State's consolidated fund and \$85 million is being provided by Melbourne Water.<sup>409</sup> The Commonwealth Government has agreed to fund the second stage of renewal up to \$1 billion subject to due diligence assessments.<sup>410</sup>

To improve infrastructure efficiencies, modern technology is being utilised to address losses in the current system and improve delivery to farmers. Infrastructure improvements include:<sup>411</sup>

- channel automation - replacement of manual gates with automatic gates that measure water flow and connect with on-farm automation equipment;
- lining, remodelling or pipelining irrigation channels;
- improved meter accuracy from 10 to 5 per cent through replacement of 15,000 Dethridge wheels with modern devices such as electromagnetic flow metres and flume gates; and
- future water costs – upgrades are predicted to provide savings, however, there will be new operational costs, with charges to be determined by a regulated water pricing process.

Modernisation of the irrigation system has seen more uniform water flows, shorter response times to orders for water and will in the future see increased water availability through efficiency savings. The Minister stated that in addition to improved services to farmers, there had been benefits in employment. Jobs had been generated in manufacturing, earth moving and

<sup>408</sup> Northern Victoria Irrigation Renewal Project: *Fact sheet*, accessed 20 August 2009, [http://www.ourwater.vic.gov.au/\\_\\_data/assets/pdf\\_file/0013/13711/5-NVIRP-fact-sheet-Aug-08.pdf](http://www.ourwater.vic.gov.au/__data/assets/pdf_file/0013/13711/5-NVIRP-fact-sheet-Aug-08.pdf)

<sup>409</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.3

<sup>410</sup> Northern Victoria Irrigation Renewal Project: *Fact sheet*, accessed 20 August 2009, [http://www.ourwater.vic.gov.au/\\_\\_data/assets/pdf\\_file/0013/13711/5-NVIRP-fact-sheet-Aug-08.pdf](http://www.ourwater.vic.gov.au/__data/assets/pdf_file/0013/13711/5-NVIRP-fact-sheet-Aug-08.pdf)

<sup>411</sup> Victorian Government, *Our Water Our Future, What is Irrigation Renewal* webpage, accessed 28 July 2009, <http://www.ourwater.vic.gov.au/programs/irrigation-renewal/about>





### 14.2.7 Treated wastewater

Wastewater is already being treated at the Western Treatment Plant with Class A output being used in the Werribee Irrigation District by market gardeners. Class A water is the highest quality of treated or recycled water and is achieved through a tertiary treatment process and pathogen removal.<sup>420</sup> The Government is providing \$3 million in grant funding over three years to encourage innovative projects that use this water.<sup>421</sup> The Eastern Treatment Plant is currently being upgraded to also produce Class A water. The Committee inquired into the status of the upgrade, including current cost estimates and scheduled completion at Budget Estimates hearings.

The Minister for Water informed the Committee that while the choice of technology to be used was still being resolved, substantial works had already commenced and is on track to be completed by 2012. Delivery of the project is anticipated to be within budget, however, the Minister confirmed that an adjustment to the actual cost figure was required in real dollar terms between 2007 and 2009.<sup>422</sup> Upon completion, the Eastern Treatment Plant will have a capacity to produce 100 million litres of Class A water annually.<sup>423</sup> This will add to a potential annual capacity of 8,500 million litres from the Western Treatment Plant.<sup>424</sup>

In addition to providing water, the Minister also explained that this is:<sup>425</sup>

*a very important project also in terms of being able to resolve some of the challenges around the outfall at Gunnamatta and the quality of the water and the nature of the outfall that exists at the moment.*

### 14.2.8 Stormwater harvesting

Stormwater presents a significant resource if infrastructure can be designed and implemented to treat, store and supply harvested stormwater. One estimate is that less than 0.25 per cent of Melbourne's stormwater is harvested.<sup>426</sup>

The *Stormwater and Urban Water Conservation Fund* was allocated \$10 million in 2004 and provided assistance and technical support to the development of 66 local projects. In 2007 the later renamed *Stormwater and Urban Recycling Fund* was allocated a further \$10 million over four years with \$3 million allocated for 2009-10.<sup>427</sup>

<sup>420</sup> Melbourne Water, *Quality of Recycled Water* website, accessed 20 August 2009, [http://www.melbournewater.com.au/content/water\\_recycling/quality\\_of\\_recycled\\_water/quality\\_of\\_recycled\\_water.asp?bhcp=1](http://www.melbournewater.com.au/content/water_recycling/quality_of_recycled_water/quality_of_recycled_water.asp?bhcp=1)

<sup>421</sup> Victorian Government, *Our Water Our Future, Objectives and Funding Requirements* webpage, accessed 28 July 2009, <http://www.ourwater.vic.gov.au/programs/recycling/v4wp/objectives>

<sup>422</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, pp.10-11

<sup>423</sup> Melbourne Water, *Water Recycling Projects* webpage, accessed 28 July 2009, [http://education.melbournewater.com.au/content/sewage\\_and\\_recycling/water\\_recycling\\_projects/water\\_recycling\\_projects.asp](http://education.melbournewater.com.au/content/sewage_and_recycling/water_recycling_projects/water_recycling_projects.asp)

<sup>424</sup> Victorian Government, *Our Water Our Future, Werribee Recycled Water Scheme* webpage, accessed 28 July 2009, <http://www.ourwater.vic.gov.au/programs/recycling/werribee>

<sup>425</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.10

<sup>426</sup> Environment and Natural Resources committee, *Inquiry into Melbourne's Future Water Supply*, June 2009, p.119

<sup>427</sup> *ibid.*, p.123; Department of Treasury and Finance, Budget Paper No. 3, 2007-08 *Service Delivery*, p.327

### 14.2.9 Water recycling

Water recycling provides fit-for-purpose water for industry and the community. The 2007-08 budget provided \$16 million over two years for water recycling projects across Melbourne.<sup>428</sup> The government's *Smart Water Fund* assists the development of water and bio-solids recycling. Domestically, greywater (water from baths, washing machines etc) can be recycled for flushing toilets and selected garden watering. The Environmental Protection Agency recommends that collected greywater not used within 24 hours be discharged. Compliant greywater systems installed by a licensed plumber are eligible for a government rebate.<sup>429</sup>

The 2009-10 Budget includes a performance measure for water savings through water recovery projects currently being implemented. The target is a saving of 153,800 mega litres of water in 2009-10. The expected outcomes for 2008-09 are less than the target amount due to '*minor revisions to the timing of works*'.<sup>430</sup> The Committee asked the Minister to outline the revisions referred to in the Budget Papers.

He stated that:<sup>431</sup>

*the difference between the 2008–09 published budget and the 2008–09 revised budget is essentially due to the timing of expected contributions to Victorian water saving projects and additional one off funding for water rate rebates to irrigators announced as part of the 2008 drought package.*

Class A water is '*safe for most uses except for drinking, cooking and swimming*'.<sup>432</sup> Recycled water is presently provided to farms, market gardens, vineyards, golf courses and sports grounds. The government has stated that it will broaden its scope for the use of recovered water.<sup>433</sup> The use of recovered water for cooling in Latrobe Valley power generators which currently accounts for approximately 3 per cent of urban non-residential water consumption is being considered. Recovered water is also being supplied through a dual pipe water system (delivering both potable water and Class A water) into two new housing estates in Melbourne's south east and is being installed at other new estates.<sup>434</sup> The benefit of supplying Class A water through a second pipe is limited by supply capacity. If supply does not match demand, supplementary potable water is required. Due to treatment issues some dual pipe infrastructure is currently being supplied with potable water.<sup>435</sup>

### 14.2.10 Conclusion

Ensuring a sustainable water supply for Victoria is the responsibility of the Department of Sustainability and Environment. Initiatives to save water, improve irrigation infrastructure and recover water are important components of the *Our Water Our Future* water strategy to ensure Victoria's water resources into the future. The 2009-10 Budget continues funding for water initiatives from previous state budgets, including water saving initiatives in 2007-08 and irrigation renewal in the 2008-09 budget.

<sup>428</sup> Department of Treasury and Finance, Budget Paper No. 3, *2007–08 Service Delivery*, May 2009, p.21

<sup>429</sup> Environment and Natural Resources Committee, *Inquiry into Melbourne's Future Water Supply*, June 2009, p.81

<sup>430</sup> Department of Treasury and Finance, Budget Paper No. 3, *2009-10 Service Delivery*, May 2009, pp.212-4

<sup>431</sup> Hon. T Holding MP, Minister for Water, 2009-10 Budget Estimates hearings, transcript of evidence, 15 May 2009, p.14

<sup>432</sup> Melbourne Water, *Recycled Water* webpage, accessed 28 July 2009,

[http://education.melbournewater.com.au/content/sewage\\_and\\_recycling/recycled\\_water/recycled\\_water.asp](http://education.melbournewater.com.au/content/sewage_and_recycling/recycled_water/recycled_water.asp)

<sup>433</sup> Victorian Government, *Our Water Our Future, Government Programs, Increasing Recycling* webpage, accessed 28 July 2009, <http://www.ourwater.vic.gov.au/programs/recycling>

<sup>434</sup> Hon. T Holding MP, Minister for Water, Media release '*Recycled Water use at all-time high*', 13 November 2008

<sup>435</sup> Environment and Natural Resources Committee, *Inquiry into Melbourne's Future Water Supply*, June 2009, p.197

The Government predicts that, once completed, water saving initiatives will save a total of 80 gigalitres per annum, equivalent to the capacity of Sugarloaf Reservoir and that irrigation renewal will save a long term average of 425 gigalitres.<sup>436</sup> That is a total saving of over 500 gigalitres compared with a ten year average annual water consumption in Melbourne of 480 gigalitres.<sup>437</sup> The Committee notes that savings through improved irrigation efficiencies are related to rainfall, run-off and available water resources. Organisations and individuals have questioned the basis for the Government's estimates and the Auditor-General has recommended that the Department of Sustainability and Environment publish its analysis of estimated water savings and costs.<sup>438</sup> This information would assist better assessment of the value for money of the project. The Committee concurs with that finding and will consider these matters further in its inquiry into the Auditor-General's findings in his report, *Planning for Water Infrastructure in Victoria*.

### 14.3 Sustainable energy

The Government has set its own sustainable energy goals and established energy efficiency programs for business and industry and incentives for domestic energy users to reduce consumption. In 2008, coal fired power stations accounted for 94 per cent of Victoria's electricity generation, gas fired power stations generated 4 per cent and renewable energy sources 2 per cent.<sup>439</sup> The burning of coal is a carbon intensive process and in 2008 coal-fired energy generation in Victoria emitted 62 million tonnes of CO<sub>2</sub> equivalent greenhouse gases.<sup>440</sup>

The *Garnaut Climate Change Review* stated that 'if the world is to meet the challenge of climate change, there will need to be a transformation in Australia's stationary energy sector as it adjusts to mitigation policies' and continues, '*the energy sector makes a larger contribution to greenhouse gas emissions in Australia than in other developed countries.*'<sup>441</sup>

The impact of greenhouse gases on climate change has led to investment in renewable energy sources and sustainable energy use. The 2008-09 budget provided \$72 million over six years to support '*large scale, pre-commercialisation demonstration of sustainable energy technologies, such as solar energy storage, biofuels, biomass conversion, geothermal energy efficiency and clean distributed energy.*'<sup>442</sup>

#### 14.3.1 Renewable energy investment

The amount of energy generated from renewable sources rose by 14 per cent in Victoria in 2008, accounting for 2 per cent of the state's energy production.<sup>443</sup> In August 2009 the Commonwealth Parliament affirmed impending legislation on a renewable energy target of 20 per cent by 2020. Large-scale solar energy technology is the main focus of Victorian Government investment in renewable energy, as it believes this technology to be the most efficient. In the 2009-10 Budget the government allocated \$100 million to support the development of a second large-scale solar power station. The government has stated that investment in this technology is designed to offset some of the technical risk of investment in this emerging technology and to '*change the energy*

<sup>436</sup> Department of Treasury and Finance, Budget Paper No. 3, *2007-08 Service Delivery*, May 2007, p.21; Northern Victoria Irrigation Renewal Project, *Plan Design Deliver: Our Vision* website, accessed 20 August 2009, <http://www.nvirp.com.au/>

<sup>437</sup> *Smart Water Fund, Help develop our water future* website, accessed 20 August 2009, <http://www.smartwater.com.au/mainf.asp>

<sup>438</sup> Victorian Auditor-General's Office, *Planning for Water Infrastructure in Victoria*, April 2008, pp.22, 33-34

<sup>439</sup> The Climate Group, *Australian Electricity Generation Report 2008*, p.9

<sup>440</sup> *ibid.*, p.10

<sup>441</sup> R Garnaut, *The Garnaut Climate Change Review*, 2008, p.467-8

<sup>442</sup> Department of Treasury and Finance, Budget Paper No. 3, *2007-08 Service Delivery*, May 2009, p.28

<sup>443</sup> The Climate Group, *Australian Electricity Generation Report 2008*, p.8

*mix*'.<sup>444</sup> The Government has also supported the development of a new approach to manufacturing solar cells using note printing technology with \$6 million funding.<sup>445</sup>

New funding for a second large-scale solar power station is dependent upon a matched level of investment from the Commonwealth Government. An initial \$1 million has been provided to facilitate the tender process for the project, with \$600,000 allocated for 2009-10 and the remainder the following year.<sup>446</sup>

The Government has already offered \$50 million for the development of a solar power station in north-west Victoria.<sup>447</sup> The company Solar Systems had been undertaking that project, but went into voluntary administration in September 2009 due, at least in part, to difficulties raising sufficient capital from investors.<sup>448</sup> The Government's \$50 million is still on offer and the Government is hoping that the project will attract other investors and proceed.<sup>449</sup>

Small-scale renewable energy generation is being subsidised by the Government through a feed-in tariff for electricity generated from photovoltaic modules (solar panels or PVs). The Committee asked the Minister for Energy and Resources, about the viability of this approach and the costing of a solar power feed-in tariff. The costs and benefits between a net feed-in tariff for excess electricity generated and a gross feed-in tariff which pays a premium for the total amount of electricity generated were discussed at Budget Estimates hearings.

The Minister stated that a gross feed-in tariff granted too great a financial advantage to those installing PVs to the detriment of other electricity consumers by a factor of four. The government's support for rooftop PVs is limited because they are '*the most expensive form of electricity generation in Victoria and they are the most inefficient*'. The Minister for Energy and Resources indicated that the cost of electricity was in the magnitude of \$400 per MW/hr<sup>450</sup> which approximately is 2.5 times domestic retail prices for coal generated electricity.<sup>451</sup>

Subsequent to the hearings, Parliament passed the *Electricity Industry Amendment (Premium Solar Feed-in Tariff) Bill 2009*, which provides for a net feed-in tariff for households, community groups and small businesses. The tariff is at 60¢ per kWh, over three times the standard retail price for electricity.<sup>452</sup> The intention of this bill was to support the government's commitment '*to tackling climate change and to establishing practical measures that assist Victorian households to reduce their greenhouse gas emissions*'.<sup>453</sup> To ensure that costs to other consumers were not excessive, the legislation caps the scheme such that it will not cost each electricity consumer more than \$10 per year.

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<sup>444</sup> Public Accounts and Estimates Committee, *Report on the 2007-08 Financial and Performance Outcomes*, May 2009, p.379

<sup>445</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, 19 May 2009, p.4

<sup>446</sup> Department of Treasury and Finance, Budget Paper No. 3, *2009–10 Service Delivery*, pp.30, 350

<sup>447</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, 19 May 2009, p.4

<sup>448</sup> Mr M Murphy and Mr A Morton, '*Lack of Funds Sank Solar Power Farm*', *The Age* online, 9 September 2009, accessed 30 September 2009, <http://www.theage.com.au/national/lack-of-funds-sank-solar-power-farm-20090908-fgli.html>

<sup>449</sup> Minister for Energy and Resources, Media Release: Victoria Committed to a Solar Future, 18 September 2009, accessed 30 September 2009 <http://www.premier.vic.gov.au/minister-for-energy-resources/victoria-committed-to-a-solar-future.html>

<sup>450</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, pp.4, 15

<sup>451</sup> Victorian Government, *Welcome to Your Choice* website, accessed 14 August 2009, <http://www.yourchoice.vic.gov.au/>

<sup>452</sup> Department of Primary Industries, *Premium Rate for Solar Power* webpage, accessed 30 September 2009 <http://www.dpi.vic.gov.au/dpi/dpinenergy.nsf/LinkView/7AFCBB81592B8111CA2576350020903D3E1179147BC310BACA257635001F2BEF>

<sup>453</sup> Hon. P Batchelor MP, *Victorian Parliamentary Debates, Legislative Assembly*, 12 March 2009, p.789

Other renewable energy investment projects identified were:<sup>454</sup>

- a new hydro power station at Mt Bogong;
- research into the potential of geothermal energy generation in Victoria; and
- planning for an increase in excess of 650 per cent in wind power capacity.

Funding was also provided in the 2008-09 Budget for research into other sustainable energy options.<sup>455</sup>

The Commonwealth Government verifies renewable energy sources through the *GreenPower* accreditation program. Accreditation ensures that investment in renewable energy will be recognised as such in the energy market. The program also offers energy consumers confidence that paying a premium for electricity is contributing to sustainable energy.

### **14.3.2 Renewable energy targets**

The Victorian Government had set a renewable energy target of 10 per cent by 2016. The Commonwealth Government set a higher target of 20 per cent by 2020 in August 2009 and the Minister for Energy and Resources stated that Victoria's scheme should be absorbed into the Federal renewable energy target.<sup>456</sup> The 2008-09 Budget states that the Victorian scheme would transition to the Federal scheme and budget funding for the Victorian Renewable Energy Target Scheme does not extend beyond 2009-10.<sup>457</sup>

### **14.3.3 Non-renewable energy options**

Non-renewable energy options that reduce, eliminate or avoid greenhouse gas emissions from electricity generation are being investigated as part of a sustainable energy future. Options being explored include carbon capture and storage and gas-fired power stations. .

The Government has committed \$132 million over six years to the development of carbon capture and storage (CCS) technologies and the promotion of clean coal.<sup>458</sup> Successful development of CCS technology that removes carbon from emissions before entering the atmosphere would help negate carbon emissions from the burning of fossil fuels including coal. Considering Victoria's large coal reserves the successful development of large-scale CCS promises economic benefits and a sustainable energy option for Victoria. In 2009-10 the Government will provide \$3.1 million funding for the Clean Coal Authority and \$5.5 million as a member of the Cooperative Research Centre for Greenhouse Gas technologies.

<sup>454</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, 19 May 2009, p.8

<sup>455</sup> Department of Treasury and Finance, Budget Paper No. 3, *2009-10 Service Delivery*, May 2009, p.28

<sup>456</sup> *ibid.*, pp.8-9

<sup>457</sup> Department of Treasury and Finance, Budget Paper No. 3, *2008-09 Service Delivery*, May 2009, p.351

<sup>458</sup> *ibid.*, p.28

The 2008-09 Budget provided \$110 million (over six years) through the *Energy Technology Innovation Strategy* towards the development of a large-scale pre-commercial CCS demonstration project.<sup>459</sup> Speaking about the development of the HRL clean coal demonstration plant, the Minister for Energy and Resources, explained at the Budget Estimates hearing:<sup>460</sup>

*It has had some delays that have been brought about by the final site selection and some issues about where it will get its coal from ... The advice we are getting from HRL is that is almost close to resolving both those issues ... It says it is in the process of finalising its finances and, notwithstanding the current state of the global financial crisis, it is still confident that it will get finance.*

The Minister believed that, ‘preliminary site works might commence by the end of the year’ but added that HRL’s ‘earlier predictions have not proved to be precise.’<sup>461</sup>

Previous funding of \$50 million has been provided for a \$750 million integrated drying and gasification combined cycle demonstration plant. The Committee inquired after progress of this project. The Minister for Energy and Resources stated that the project had experienced delays due to issues of site selection and coal sourcing but that resolution on both counts was close.<sup>462</sup> The plant will test large-scale heating of coal to extract a synthetic gas that can then be burnt in a gas turbine to generate electricity.

Gas-fired power stations provide a lower-carbon option for electricity supply compared with coal-fired power stations. The Minister outlined for the Committee gas-fired power stations in development, proposed or under consideration, including one in Mortlake which is due to begin generating electricity in 2010.

Nuclear power is considered in some quarters as a sustainable energy option and Australia holds large uranium reserves. However, non-public acceptance of nuclear power is a barrier to its uptake.<sup>463</sup> This was evident in Committee concerns that the funds in the state budget for the development of the national energy market reform process could result in Victoria funding nuclear energy and further, that a future pro-nuclear Commonwealth Government could set up nuclear power plants in Victoria. The Minister acknowledged that there was ‘a push coming from certain quarters in relation to nuclear energy’ but that the Victorian government was ‘opposed to it being a source of energy here in Victoria’.<sup>464</sup>

#### **14.3.4 Sustainable energy use**

Sustainable energy use is the corollary of sustainable energy generation. The Government has targeted both private and commercial energy users in an attempt to reduce energy consumption.

For residential energy users, the Government launched an energy savers incentive scheme that began in 2009. The scheme assists households to make energy efficient choices. Discounts and special offers are provided through electricity generators and retailers with the potential incentive related to greenhouse gas reduction.<sup>465</sup> The scheme is funded by imposing a legal liability on large

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<sup>459</sup> Public Accounts and Estimates Committee, *Report on the 2008-09 Budget Estimates — Part Three*, October 2008, p.210

<sup>460</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, 19 May 2009, p.9

<sup>461</sup> *ibid.*

<sup>462</sup> *ibid.*, pp.8-9

<sup>463</sup> R Garnaut, *The Garnaut Climate Change Review*, 2008, p.476

<sup>464</sup> Hon. P Batchelor MP, Minister for Energy and Resources, 2009-10 Budget Estimates hearings, transcript of evidence, 19 May 2009, p.13

<sup>465</sup> Minister for Energy and Resources, *Media Release: Victoria Committed to a Solar Future*, 18 September 2009, accessed 30 September 2009, <http://www.premier.vic.gov.au/minister-for-energy-resources/discounts-available-now-for-households-saving-energy.html>

electricity and gas retailers to acquire and surrender ‘*Victorian energy efficiency certificates*’ which are created by undertaking prescribed activities which reduce energy use in homes.<sup>466</sup> The Premier stated that the scheme has been ‘*getting significant savings, and significant savings are indeed possible*’.<sup>467</sup> Another residential program, the *Low Income Retrofit* program (which assists low income and social housing residents in reducing energy costs) was extended for two years in the 2008-09 budget with \$4.1 million funding.<sup>468</sup>

The Department of Sustainability and Environment provides specific energy reduction information through the *ResourceSmart* program. The program is provided by Sustainability Victoria. *ResourceSmart* has categories for households, teachers, businesses and government. Information includes actions to reduce energy use and promotes the use of *GreenPower* thereby addressing both energy use and generation.

The Department of Sustainability and Environment predicts that more than 200 public sector agencies will be participating in the *ResourceSmart* program by 2010.<sup>469</sup> It has been demonstrated by departments that sustainability initiatives, including energy efficiency, have a payback of three years.<sup>470</sup>

Energy efficiency in the commercial sector is the focus of the *Environment and Resource Efficiency Plan* (EREP) program. The program requires all businesses with site based operations using in excess of 100 terajoules of energy per annum to plan and implement energy reduction actions with a payback period of three years or less. At 31 December 2008 approximately 250 sites across Victoria had energy (and/or water) reduction plans in place.<sup>471</sup>

The Department has developed in consultation with other government agencies and Sustainability Victoria, the *ResourceSmart* Program to assist government agencies reduce operational impact on the environment. Government departments and agencies have, since 2002, improved energy efficiency by 16 per cent overall and *GreenPower* comprises 10.2 per cent of their electricity consumption.<sup>472</sup> The Government’s policy is that by June 2010 departments and centrally funded statutory agencies will have improved energy efficiency by 20 per cent compared to 1999-2000 and be procuring 25 per cent of energy requirements from *GreenPower* accredited sources.<sup>473</sup> Progress towards these targets is published in department annual reports as a requirement of Financial Reporting Directive 24C (FRD 24C).

<sup>466</sup> Essential Services Commission, *Victorian Energy Efficiency Target (VEET) Scheme* webpage, accessed 1 October 2009, <http://www.esc.vic.gov.au/public/VEET/>

<sup>467</sup> Hon. J Brumby MP, Premier, 2009-10 Budget Estimates hearings, transcript of evidence, 11 May 2009, p.30

<sup>468</sup> Department of Treasury and Finance, Budget Paper No. 3, *2008-09 Service Delivery*, p.29

<sup>469</sup> Department of Sustainability and Environment, *2008-09 Annual Report*, p.81

<sup>470</sup> ResourceSmart, *Quick Facts* webpage, accessed 30 July 2009, [http://www.resourcesmart.vic.gov.au/documents/ResourceSmart\\_Government\\_Quick\\_Facts.pdf](http://www.resourcesmart.vic.gov.au/documents/ResourceSmart_Government_Quick_Facts.pdf)

<sup>471</sup> EPA Victoria, *More about EREP* webpage, accessed 30 July 2009, [http://www.epa.vic.gov.au/bus/erep/EREP\\_who\\_is\\_participating.asp](http://www.epa.vic.gov.au/bus/erep/EREP_who_is_participating.asp)

<sup>472</sup> Government of Victoria, *Government Sustainability Energy Targets: Progress Report*, April 2008, p.16 [http://www.sustainability.vic.gov.au/resources/documents/GSET\\_Report.pdf](http://www.sustainability.vic.gov.au/resources/documents/GSET_Report.pdf)

<sup>473</sup> ResourceSmart, *Victorian Government policy and targets* webpage, accessed 30 July 2009, [http://www.resourcesmart.vic.gov.au/documents/Victorian\\_Government\\_Policy\\_and\\_Targets1.pdf](http://www.resourcesmart.vic.gov.au/documents/Victorian_Government_Policy_and_Targets1.pdf)

### 14.3.5 Sustainable energy use in government

The Budget Estimates questionnaire asked departments what initiatives were planned for 2009-10 to enhance reporting of the mandatory and optional office-based environmental indicators identified in FRD 24C. Identified initiatives to enhance reporting varied between departments.

The Department of Primary Industries stated that it is ‘*undertaking a sub-metering project to separate office and operation energy use*’ allowing greater matching of energy use to operational functions.<sup>474</sup> The Department of Innovation, Industry and Regional Development stated that it currently exceeds the requirements of FRD 24C. The Department is considering further enhancement of its reporting. Consideration is being given to:<sup>475</sup>

- itemisation of waste streams;
- itemising types of paper and its sources; and
- reporting water consumption per m<sup>2</sup> of office space.

Some planning to enhance reporting was demonstrated by departments through initiatives to improve data collection. The Department of Human Services has committed to changes in data collection and reporting recommended by the Commissioner for Environmental Sustainability.<sup>476</sup> The Department of Premier and Cabinet and the Department of Treasury and Finance stated that the implementation of a water metering system and implementation of improved waste auditing methodology would enhance reporting.<sup>477</sup> Similarly the Department of Planning and Community Development plans to enhance reporting through the inclusion of details about ‘*actions undertaken during the year, projected targets and key achievements*’.<sup>478</sup>

Three departments indicated that they planned to meet the requirements of FRD 24C. The Department of Education and Early Childhood Development stated that reporting would be expanded to include new mandatory requirements.<sup>479</sup> The Department of Justice stated that it will continue to fulfil all mandatory and optional reporting.<sup>480</sup> The Department of Sustainability and Environment stated that it would ‘*continue to adhere to FRD 24C*’.<sup>481</sup> A third department, the Department of Transport, listed internal measures to reduce environmental impact.<sup>482</sup>

### 14.3.6 Conclusion

The future generation and level of energy use will determine whether Victoria achieves the Government’s sustainable energy objectives. Victoria’s current coal dependency and associated high levels of greenhouse gas emissions require Victoria to invest in sustainable energy. The Government is supplying funding towards sustainable energy generation and is introducing policies to reduce energy use.

<sup>474</sup> Department of Primary Industries, response to 2009-10 Budget Estimates questionnaire, May 2009, p.13

<sup>475</sup> Department of Innovation, Industry and Regional Development, response to 2009-10 Budget Estimates questionnaire, p.19

<sup>476</sup> Department of Human Services, response to 2009-10 Budget Estimates questionnaire, May 2009, p.15

<sup>477</sup> Department of Premier and Cabinet, response to 2009-10 Budget Estimates questionnaire, May 2009, p.7;

Department of Treasury and Finance, response to 2009-10 Budget Estimates questionnaire, May 2009, p.16

<sup>478</sup> Department of Planning and Community Development, response to 2009-10 Budget Estimates questionnaire, May 2009, p.15

<sup>479</sup> Department of Education and Early Childhood Development, response to 2009-10 Budget Estimates questionnaire, May 2009, p.23

<sup>480</sup> Department of Justice, response to 2009-10 Budget Estimates questionnaire, p May 2009,p.20-1

<sup>481</sup> Department of Sustainability and Environment, response to 2009-10 Budget Estimates questionnaire, May 2009,p.14

<sup>482</sup> Department of Transport, response to 2009-10 Budget Estimates questionnaire, May 2009,p.14



Renewable energy generation is supported through funding for large-scale solar power stations and subsidies for photovoltaic modules through premium feed-in tariffs. The government has also committed money to exploring other technologies. In addition, significant funding has been provided for carbon capture and storage projects, to reduce the impact of energy production from non-renewable sources.

To reduce energy use, mandatory programs have been established by the Government requiring industry and business to assess energy use and enact plans for improving energy efficiency. The Government provides information and incentives for domestic energy users to make energy-efficient choices and actions. Reducing energy use will contribute to energy sustainability in Victoria.

There was some initiative shown by departments to enhance reporting of environmental impact beyond the requirements of FRD 24C. The Department of Primary Industries and the Department of Innovation, Industry and Regional Development both stated that enhanced monitoring would permit a greater level of detail to be recorded.

## 14.4 Climate change initiatives and programs for the agricultural sector

The agricultural sector is susceptible to climatic changes and needs to prepare for the impact of climate change. The government's *Future Farming* strategy has guided initiatives focused on adapting to climate change. However, climate change needs to be mitigated in concert with adaptation.

The *Garnaut Climate Change Review* concludes that if action is not taken to mitigate climate change the agricultural sector will be 'hit particularly hard'. The best estimate for the Murray-Darling Basin is that by the middle of the 21<sup>st</sup> Century annual irrigated agricultural output will have been halved and by 2100 'it would no longer be a home to agriculture'.<sup>483</sup>

In its February 2009, *Annual Statement of Government Intentions* the Government identified climate change as a priority. The Government has continued funding for the Office of Climate Change at current levels for another two years in the 2009-10 Budget.<sup>484</sup>

The Committee considered the breadth of government budget proposals concerning climate change in the Healthy Environment chapter of the *Report on the 2008-09 Budget Estimates – Part Three*. At this year's Budget Estimates hearings, the Committee focused on the challenge climate change presents the agricultural sector.

### 14.4.1 Challenges facing the agricultural sector

The Minister for Agriculture identified climate change as one of the biggest challenges facing the agricultural sector. The sector is being challenged by the effects of climate change and needs to reduce its contributing emissions. The agricultural sector is heavily dependant upon water and uses 77 per cent of Victoria's supply. Reduced water availability and increased temperature will affect the viability of crops and livestock production. The Victorian agricultural sector is responsible for approximately 13 per cent of the state's greenhouse gas emissions.<sup>485</sup>

<sup>483</sup> R Garnaut, *The Garnaut Climate Change Review*, 2008, p.258

<sup>484</sup> Department of Premier and Cabinet response to 2009-10 Budget Estimates questionnaire, May 2009, p.7

<sup>485</sup> Victorian Government, *Future Farming: Productive competitive and sustainable*, 2008, p.5

Victoria has experienced eight consecutive years of below average rainfall. The Minister for Agriculture stated that this is ‘*the longest drought on record*’.<sup>486</sup> The drought being experienced in Victoria has appearances of climactic change. The Department of Primary Industries states:<sup>487</sup>

*Substantial variability in rainfall, temperature and extreme events have long characterised farming in Victoria, but our farmers are now facing a changing global climate.*

The government identified in the *Future Farming* strategy that it was ‘*re-shaping and strengthening its services and policies*’ to support the agricultural sector to modernise, partly in preparedness for the challenges of a future affected by climate change. The 2008-09 Budget funded initiatives identified in this strategy. The Department of Primary Industries predicts that without ‘*adequate preparation, understanding and adaptation*’ climate change will reduce farm production. For example dairy output is predicted to decline 5 per cent by 2030 and 10 per cent by 2050.<sup>488</sup> Yet, in the short term an adaptive approach to climate change in agricultural practice (without mitigation) would see growth in the output of some crops. For example, it is predicted that wheat crop yields in Birchip would increase by 14.8 per cent by 2030 compared to 1990 yield. However, this positive short term outlook will likely be ‘*negated by increasing temperatures and declining available water*’ by 2100 with the yield reduced to 24.1 per cent below 1990 output.<sup>489</sup> The results improve if steps are taken to mitigate climate change. It can be concluded therefore that adaptive measures alone will only provide selective short term solutions and mitigation of climate change is a necessity in the longer term.

#### **14.4.2 Climate change action areas**

In April 2008 the Victorian Government released the *Future Farming – Productive, Competitive and Sustainable* strategy. Mr Helper stated at the Budget Estimates hearings that what was driving the Strategy was the Government’s ‘*commitment to improving productivity, to improving resilience and to improving sustainability of our farm sector*’.<sup>490</sup> This strategy recognises the need for innovation in the sector to adapt farming systems to the challenges of climate change.

There were seven key action areas in the strategy, of which two focused upon the challenge of climate change:<sup>491</sup>

- new on-farm technology and change to practices; and
- understanding and managing risks in a changing climate.

The Government has committed \$5.2 million over four years to ‘*give farm businesses better access to relevant information and research about climate change*’ and \$6.2 million over the same period to ‘*provide lamb, grains and horticulture farmers with new technologies and strategies to adapt their farming systems and practices*’.<sup>492</sup> The funding commitment began with \$2.5 million in 2008-09 increasing to \$2.9 million in 2009-10.<sup>493</sup> The focus of the *Future Farming* strategy is on management and adaptation to climate change.

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<sup>486</sup> Mr J Helper MP, Minister for Agriculture, 2009-10 Budget Estimates hearings, transcript of evidence, 14 May 2009, p.2

<sup>487</sup> Victorian Government, *Future Farming: productive, competitive and sustainable*, p.23

<sup>488</sup> *ibid.*

<sup>489</sup> R Garnaut, *The Garnaut Climate Change Review*, 2008, p.132

<sup>490</sup> Mr J Helper MP, Minister for Agriculture, 2009-10 Budget Estimates hearings, transcript of evidence, 14 May 2009, p.7

<sup>491</sup> Victorian Government, *Future Farming: Productive competitive and sustainable*, 2008, p.7

<sup>492</sup> Mr J Helper MP, Minister for Agriculture, 2009-10 Budget Estimates hearings, transcript of evidence, 14 May 2009, p.2

<sup>493</sup> Department of Primary Industries, response to 2009-10 Budget Estimates questionnaire, May 2009, p.12

The *Garnaut Climate Change Review 2008* argues that adaptation to climate change alone will not be as beneficial as combined adaptation and mitigation. While the Department of Primary Industries and the agricultural sector can have a significant influence on adaptation strategies the sector's influence on mitigation is less as the sector accounts for only 17 per cent of Victoria's greenhouse gas emissions. The National Farmers Federation states that '*there are significant limitations on the degree to which agricultural emissions can be reduced*'.<sup>494</sup> The Government is addressing mitigation through other departments. This has been considered already in this chapter in sections on water resources and energy generation (refer 14.2 and 14.3). Potential reductions in the agricultural sector to affect mitigation do not appear to be a priority. Overall funding for the Department of Primary Industries' *Sustainable Practice Change* output is being reduced.

The 2009-10 Budget provides funding of \$163.1 million compared with an expected expenditure of \$214.7 million for 2008-09.<sup>495</sup> There are four new performance measures in the 2009-10 Budget, a net increase of one. The new measures are the numbers of:<sup>496</sup>

- farm clients facing significant adjustment pressures case managed to make better informed and timely decisions;
- farming communities provided with information through Agricultural Futures Forums about the key drivers of change for agriculture to guide local decision making;
- case managed irrigation connections undertaken; and
- significant stakeholder interactions on climate change, climate variability and emission management.

The first two new performance measures replaced the numbers of '*targeted areas in which DPI will conduct additional case management for adjustment*' and '*regional communities actively supported through structural adjustment programs*'. The second two are associated with the *Future Farming* strategy. One of these new measures is a target of 1,500 significant stakeholder interactions on climate change, climate variability and emission management. The Committee is of the view that at a time when there is a requirement to develop sustainability in the agricultural sector, the Government has not sufficiently resourced the Department of Primary Industries to meet this requirement. There has been an increase in performance measures in Sustainable Practice Change but funding for this output has been reduced in the last two budgets. The Government has to align funding with its expectations of department performance.

**Recommendation 43:**

**An increase in funding for the Sustainable Practice Change output could be considered to meet increased performance expectations and support mitigation of climate change through development of sustainable farming practices.**

### 14.4.3 Conclusion

Climate change presents a significant challenge to the future of agriculture in Victoria with potentially radical changes by the end of the century. The Government's *Future Farming* strategy is pursuing initiatives designed to manage changes through adaptation of the agricultural sector to the effects of climate change. The Garnaut Review finds, however, that adaptation without mitigation is insufficient to protect Victoria's agricultural sector. Government programs and initiatives to address climate change in the agricultural sector need to include mitigation alongside adaptation strategies.

<sup>494</sup> National Farmers Federation, *Position Statement: Agriculture and the Carbon Pollution Reduction Scheme*, 6 August 2009.

<sup>495</sup> Department of Treasury and Finance, Budget Paper No. 3, *2009-10 Service Delivery*, May 2009, p.200

<sup>496</sup> *ibid.*, pp.206-8

## 14.5 Funding for the development and establishment of parks in Victoria

Parks Victoria is responsible for the majority of Victoria's 3.96 million hectares of parks and reserves including 40 national parks and 13 marine national parks. Parks Victoria identifies preservation as its '*highest commitment*' and is achieved through efficient management based on the integration of policy, planning and research.<sup>497</sup> Protection of the national environment was identified as a government priority in its 2009 statement of intention. In addition to protecting natural resources and ecosystems parks provide people with open space and the opportunity to enjoy the natural environment. The 2009-10 Budget has expanded the area preserved in Victoria through the establishment of new parks and increased public access through the development of urban parks.

The 2009-10 State Budget includes:<sup>498</sup>

- \$32 million for the establishment of four new national parks and the expansion of some existing parks to protect River Red Gum forests; and
- \$24 million for the management, development and expansion of Victoria's parks, including funding for improved amenities.

The importance of Victoria's parks to the public was illustrated by the number of questions the Committee asked the Minister for Environment and Climate Change, at the Budget Estimate hearings.

### 14.5.1 Development of parks

The 2009-10 Budget provides \$24 million in funding for the upgrading of parks and amenities and increased management responsibilities assumed by Parks Victoria. This includes \$10 million TEI of asset investment and \$4 million of output funding over four years for Point Nepean National Park. There is also \$4 million TEI for upgrading and planning of infrastructure for Port Phillip and Westernport bays. A total of \$4 million TEI has been allocated for urban parks including increased access to Frankston Reservoir and the associated Dingley Chain of Parks and six outer urban parks spread around Melbourne's city fringes and \$2 million to maintain and improve Yarra Bend Park.<sup>499</sup>

The budget has also provided \$10.3 million for bushfire preparedness across Victoria.<sup>500</sup>

### **Point Nepean**

In June 2009 the Commonwealth Government transferred the former quarantine and defence site at Point Nepean to the Victorian Government. It is the Government's intention that this land will become part of an expanded Point Nepean National Park. The Minister for Environment and Climate Change stated that there would be constraints on public access due to its historical use and the likelihood of '*ordnance within the landscape*'.<sup>501</sup>

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<sup>497</sup> Parks Victoria, *About Parks Victoria*, accessed 22 June 2009, <http://www.parkweb.vic.gov.au/1aboutus.cfm>

<sup>498</sup> Department of Treasury and Finance, Budget Paper No. 3, *2009–10 Service Delivery*, May 2009, pp.29-30

<sup>499</sup> *ibid.*, p.30

<sup>500</sup> *ibid.*, p.285

<sup>501</sup> Mr G Jennings MP, Minister for Environment and Climate Change, 2009-10 Budget Estimates hearings, transcript of evidence, 8 May 2009, p.6

The budget allocation for Point Nepean is the Department of Sustainability and Environment's second largest budget initiative comprising \$10 million allocated in the State Budget for infrastructure and asset improvement.<sup>502</sup> In addition to this funding there is approximately \$15 million residual being transferred with the land from the previous management trust. Therefore, approximately \$25 million funding is available for site improvement.<sup>503</sup>

It is expected that there would be four to six direct jobs in the form of Parks Victoria rangers and that 'somewhere in the order of four or five times that direct number of jobs would be created immediately in terms of acquitting the asset program'.<sup>504</sup>

### ***Yarra Bend Park***

Parks Victoria has negotiated with local governments to assume management for Yarra Bend Park. The budget provides \$2 million funding over four years. It is expected that the shift in management will result in reduced budget pressure for local governments while community engagement will be retained within the new governance structure to protect and enhance the park into the future.<sup>505</sup>

### ***Outer urban parks***

The Government has committed funding in the budget to improve facilities and amenities at a ring of outer urban parks. Development at Frankston reservoir will balance increased opportunities for public access with requirements of the reserves as a water storage facility. Complimenting the development of the Frankston reservoir is a proposed Dingley Chain of Parks. Funding for six further outer urban parks improving the integration of parks around the city and the protection and access to a diverse range of ecosystems from grasslands in the west to fern gullies in the Dandenong Ranges. Funding would also help develop amenities such as interpretation facilities, walking trails and barbeques.<sup>506</sup>

### ***Beach renourishment and coastal risk mitigation***

The State Budget includes \$4 million TEI for upgrading and planning key infrastructure around Port Phillip and Westernport Bays. This funding builds on \$21 million TEI committed since 2005-06 toward beach renourishment and coastal risk mitigation. This latest funding is focused on safe boating and includes works at Patterson River, Queenscliff, Rosebud, Williamstown, St Kilda and Werribee.<sup>507</sup>

## ***14.5.2 River Red Gums***

The establishment of River Red Gum National and Forest Parks was a government election policy. The establishment of four National Parks to protect River Red Gum forests and associated wetlands will help protect the greater Murray-Darling Basin. The 2009-10 Budget commitment for four new parks is the Department of Sustainability and Environment's largest budget initiative.

<sup>502</sup> Department of Sustainability and Environment response to 2009-10 Budget Estimates questionnaire, May 2009, pp.2-3

<sup>503</sup> Mr G Jennings MP, Minister for Environment and Climate Change, 2009-10 Budget Estimates hearings, transcript of evidence, 8 May 2009, p.6

<sup>504</sup> *ibid.*, p.6

<sup>505</sup> *ibid.*, p.18

<sup>506</sup> *ibid.*, pp.13, 16, 22

<sup>507</sup> *ibid.*, p.7

The government undertook a process of assessment and engagement in establishing the River Red Gum parks. Initially the Victorian Environmental Assessment Council (VEAC) reported to the Government on the policy objectives for protecting the forests. The recommendations from the report were subsequently considered by a Community Engagement Panel which in turn reported to the government. Both reports were used by the Government in planning the creation of four new National Parks along the Murray and Goulburn rivers and the extension of other parks to protect River Red Gum Forests and wetlands.<sup>508</sup>

The Murray-Darling Basin Authority recognises that the Murray-Darling Basin is under significant environmental stress through over-allocation of water, drought and climate change. The preservation of River Red Gum forests and wetlands supports the objectives of the Murray Darling Basin Authority and the Council of Australian Governments for the region. This includes the Living Murray River restoration program which is returning water to the river system. One aspect of the basin identified for protection is wetlands that have been negatively affected by an ‘*absence of natural flooding*’.<sup>509</sup>

The River Red Gums project includes water allocation to supply water for the rejuvenation of wetlands through a mimicked flooding event to improve the health of both River Red Gums and wetlands. This feature is similar to the New South Wales Koondrook–Perricoota project. Infrastructure is included to regulate out flows to protect downstream properties.<sup>510</sup>

The establishment of four new parks and the expanding of some existing National Parks to protect ‘*stressed River Red Gum forests*’ is the largest department initiative in the 2009-10 Budget. The Victorian Government has allocated \$38.5 million over four years for the River Red Gums project. The Minister for the Environment and Climate Change outlined for the Committee that this funding is made up of \$32 million over the forward estimates for operation of the parks and \$6.5 million TEI for capital infrastructure.<sup>511</sup>

The Minister for Environment and Climate Change took on notice a question from the Committee for greater details of the funding for the River Red Gum initiative. This information has been reproduced in Table 14.2.

The Committee notes that the second largest funding component of the initiative is ecological thinning and the cessation of grazing from ecological areas. Funding totals \$8 million over four years. At the Budget Estimates hearings the Minister for Environment and Climate Change identified the importance of environmental thinning for the optimisation of the outcomes of environmental flows into the wetlands. Thinning activities will be undertaken in consultation with ‘*the environment movement, local Aboriginal communities and the timber industry*’ and be the responsibility of the Department of Sustainability and Environment and Parks Victoria.

The River Red Gums initiative is expected to generate employment for 30 rangers. It is the government’s intention that half the rangers would be from the indigenous community to ensure ‘*appropriate alignment of land management and cultural heritage management*’. Further employment will be generated through fencing, construction and side-stream vegetation work.<sup>512</sup>

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<sup>508</sup> Department of Sustainability and Environment response to 2009-10 Budget Estimates questionnaire, May 2009, p.2; Department of Treasury and Finance, Budget Paper No. 3, 2009–10 *Service Delivery*, p.57

<sup>509</sup> Murray Darling Basin Authority, *Managing the Murray-Darling Basin*, accessed 22 June 2009 [http://www.mdba.gov.au/basin\\_plan/concept-statement/managing-the-basin](http://www.mdba.gov.au/basin_plan/concept-statement/managing-the-basin)

<sup>510</sup> Australia Government and Murray Darling Basin Authority, *The Living Murray, Planned works in the Koondrook-Perricoota Forest*, accessed 22 June 2009, <http://www.mdba.gov.au/system/files/Koondrook-Perricoota-planned-works.pdf>

<sup>511</sup> Mr G Jennings MP, Minister for Environment and Climate Change, 2009-10 Budget Estimates hearings, transcript of evidence, 8 May 2009, p.10

<sup>512</sup> Mr G Jennings MP, Minister for Environment and Climate Change, 2009-10 Budget Estimates hearings, transcript of evidence, 8 May 2009, pp.10-1

**Table 14.2: Budget funding allocation for River Red Gum parks**

Components	2009-10	2010-11	2001-12	2012-13	4 Year Total
<b>Output components</b>	(\$ million)				
Timber Industry Assistance Package	4.5				<b>4.5</b>
Ecological thinning and grazing removal from ecological areas, including fencing and rehabilitation	2.5	2.5	2.5	0.5	<b>8.0</b>
Park management, including park rangers	0.5	3.45	3.5	4.9	<b>12.35</b>
Regional waste management		0.2	0.3	0.3	<b>0.8</b>
Park boundary establishment and mapping		1.25	1.25		<b>2.5</b>
Pest plant and feral animal management		0.4	0.4	0.4	<b>1.2</b>
Establishment of boards of management and indigenous site protection works		0.25	0.3	0.4	<b>0.95</b>
Planning, recreation and community programs for new parks		0.33	0.32	0.23	<b>0.88</b>
System establishment to facilitate harvest of pest animals	0.2	0.2	0.2	0.2	<b>0.8</b>
<b>Total – output funding</b>	<b>7.7</b>	<b>8.58</b>	<b>8.77</b>	<b>6.93</b>	<b>31.98</b>
<b>Asset components</b>					
Visitor services management, including road and track upgrades and signage		0.3	1.37	0.84	<b>2.51</b>
Environmental water structural works			1.0	3.0	<b>4.0</b>
<b>Total – asset funding</b>		<b>0.3</b>	<b>2.37</b>	<b>3.84</b>	<b>6.51</b>

Source: Minister for Environment and Climate Change, response to Questions on Notice, 15 June 2009, Attachment 2

In its final report on the River Red Gums Forests Investigation, VEAC concluded:<sup>513</sup>

*The costs of the recommendations would be largely borne in the areas near where public land timber harvesting and grazing are focussed. The small communities of Cohuna, Koondrook, Nathalia and Picola are likely to be most sensitive to the effects of cessation of timber harvesting, as small towns have relatively little flexibility to accommodate change, particularly in the context of economic difficulties these areas have experienced in recent years.*

The VEAC recommended (recommendation R4) that:<sup>514</sup>

*Where individuals or local communities are adversely affected as a result of the implementation of recommendations in this report, government establishes a process to evaluate and implement mechanisms and levels of assistance required to minimise those effects.*

The budget set out in Table 14.2 includes a \$4.5 million *Timber Industry Assistance Package*. The Committee notes VEAC's recommendation and emphasises the importance of the government evaluating whether that package is effective and sufficient to help those communities affected by the establishment of the River Red Gum parks.

<sup>513</sup> Victorian Environmental Assessment Council, *River Red Gum Forests Investigation*, July 2008, p.97

<sup>514</sup> *ibid.*, p.26