



Facilitating Renewable Energy Development



VICTORIA

Victorian
Auditor-General

Facilitating Renewable Energy Development

Ordered to be printed

VICTORIAN
GOVERNMENT PRINTER
April 2011



This report has been produced to ISO14001 environmental standards. It is printed on FSC credited Novatech Satin paper. The print supplier, Blue Star PRINT has initiated an EMS promoting minimisation of environmental impact through the deployment of efficient technology, rigorous quality management procedures and a philosophy of reduce, re-use and recycle.

ISBN 978 1 921650 70 3

The Hon. Bruce Atkinson MLC
President
Legislative Council
Parliament House
Melbourne

The Hon. Ken Smith MP
Speaker
Legislative Assembly
Parliament House
Melbourne

Dear Presiding Officers

Under the provisions of section 16AB of the *Audit Act 1994*, I transmit my performance report on *Facilitating Renewable Energy Development*.

Yours faithfully



D D R PEARSON
Auditor-General

6 April 2011

Contents

Audit summary.....	vii
Conclusions	vii
Findings	viii
Recommendations.....	x
Submissions and comments received	x
1. Background	1
1.1 Introduction.....	1
1.2 Relative cost and capacity factors.....	2
1.3 Facilitating development of renewable energy	5
1.4 Audit objective and scope	7
2. Renewable energy development incentives	9
2.1 Introduction.....	10
2.2 Conclusion.....	10
2.3 ‘Sustainable State’ renewable energy targets.....	11
2.4 Solar energy generation targets.....	15
3. Projects and programs for facilitating renewable energy development.....	23
3.1 Introduction.....	24
3.2 Conclusion.....	24
3.3 Renewable energy projects.....	24
3.4 Inter-agency arrangements for ongoing renewable energy programs and reporting	30
Appendix A. <i>Audit Act 1994</i> section 16—submissions and comments.....	31

Audit summary

Fossil fuels have been a cheap and reliable power source for the state for nearly a century. However, growing community and scientific concern about the impact that fossil fuels have on the environment and climate has led to an increased focus on using sources of renewable energy to produce electricity sustainably.

Around 96 per cent of the electricity consumed by Victoria is generated from fossil fuels, with brown coal accounting for around 90 per cent and gas around 6 per cent. Brown coal produces around 55 per cent of the state's greenhouse gas emissions.

Renewable energy is generated using the sun, wind, water flows, organic matter and the earth's heat. Around 3.9 per cent of electricity generation comes from renewable sources, such as wind, biomass, hydro-electricity and solar.

This audit examined whether the development of renewable energy has been facilitated effectively.

Conclusions

Renewable energy research and development projects, and state-funded projects aimed at developing new technologies have been generally well managed by the responsible agencies. These projects have contributed positively to developing the capability required to generate renewable energy.

However, while total renewable energy generation has increased, efforts to increase the proportion of electricity generated from renewable sources have proven not to be effective.

Neither the setting of renewable energy targets, nor the establishment of investment incentives, has delivered expected results. The volume of renewable energy presently generated falls well short of expectations and growth in the state's capacity to generate renewable energy is not on track to meet future targets.

While several external factors have affected the amount of renewable energy generation, achievement of targets has been undermined by poor planning. Two publicly funded large-scale solar projects were not supported by a documented assessment of need; nor were business cases completed before these major investments were approved. The endorsement of the Victorian Large Scale Solar Feed-in Tariff with limited analysis of the associated costs and benefits illustrates again the gap in the accountability framework for considering and approving 'off budget' initiatives involving significant economic costs to consumers. The same issue was raised in our November 2009 report, *Towards a 'smart grid'—the roll-out of Advanced Metering Infrastructure* (2009–10:3).

Findings

‘Sustainable State’ renewable energy targets

In 2002, the then government—through its ‘Sustainable State’ election statement—committed to:

- increase the share of Victoria’s electricity consumption from renewable sources from 4 per cent to 10 per cent by 2010 (subsequently extended to 2016)
- facilitate the development and construction of up to 1 000 megawatts (MW) of wind energy facilities in environmentally acceptable locations throughout Victoria by 2006.

Reliance on setting targets to facilitate the development of renewable energy has proven not to be effective. When the targets were established in 2002, Victoria’s share of electricity generated from renewable sources—as a percentage of Victoria’s electricity consumption—was around 3.6 per cent. At the end of 2009, this had increased only to around 3.9 per cent. By the end of 2006, there had been 104 MW of wind energy facilities developed and constructed in Victoria against a target of 1 000 MW. At the end of 2010, there was 428 MW of operating wind facilities in the state.

The basis for the overall renewable energy and wind energy targets remains unclear. Before they were established, no assessments were undertaken to determine whether the 2002 targets and time frames were achievable. In addition, no plan was subsequently developed to set out how the targets would be achieved. In the absence of these key planning inputs, there was no evidence to show that planning was effective or the targets soundly based.

To drive increased generation, Victoria relied in part on the Australian Government’s Mandatory Renewable Energy Target (MRET) scheme, which had set a target in 2001 of 9 500 gigawatt hours (GWh) by 2020.

However, the amount of generation in Victoria likely to occur under the 2001 MRET was not used to establish the 2002 state targets. To achieve the state targets a higher MRET target was required, and the state subsequently argued for an increase of this target to 19 000 GWh during a 2003 review of the scheme. Following the 2003 MRET review, the Australian Government did not increase the MRET. In 2005, the Victorian Government was advised that the state’s renewable energy targets were unlikely to be met and that investment in renewable energy in the state would cease by 2007.

Solar energy generation targets

In July 2010, the then government established additional renewable energy generation targets. Through Action 3 of *Taking Action for Victoria's Future: Victorian Climate Change White Paper – The Action Plan* (the White Paper), a commitment was made to increase Victoria's electricity supply from large-scale solar power to 5 per cent by 2020—around 2 500 GWh. It also established an interim target of 500 GWh by 2014.

The then government also committed to the Victorian Large Scale Solar Feed-in Tariff—a fixed financial payment per unit of electricity produced or sold by eligible generators, over a fixed period of time—as an incentive for private sector investment. The design of the feed-in tariff has not been determined.

The 2010 solar energy targets underpin the effort to facilitate solar energy development. Despite their importance, no assessment was undertaken to support or substantiate either the targets, or the time frames for delivery. The Department of Premier and Cabinet, the department responsible for developing the White Paper and the associated targets, could not demonstrate that the targets were practicable. Like the 2002 'Sustainable State' targets, without supporting information there is no basis to show that implementation planning was adequate.

Projects to facilitate renewable energy development

In most cases, the renewable energy projects examined in this audit were well managed and the funding well administered by the responsible agencies. The projects funded under the Energy Technology Innovation Strategy, the Renewable Energy Support Fund, and Department of Business and Innovation (formerly the Department of Innovation, Industry and Regional Development) grants were soundly based, with clear objectives and targets, and clear alignment with government policy.

Two large-scale solar projects however are exceptions—the Solar Systems/Silex Project, and the Victorian Large Scale Solar Project. While both involve public funding totalling around \$150 million, neither was supported by a business case that demonstrated both the need for the project, or its alignment with government policy. The Department of Primary Industries' administration of the projects and related contracts was well managed. However, in the absence of a business case, assessing whether the projects have achieved their intended outcomes will be problematic.

Recommendations

Number	Recommendation	Page
1.	The Department of Premier and Cabinet should undertake: <ul style="list-style-type: none"> a cost-benefit analysis for the solar energy targets and the Victorian Large Scale Solar Feed-in Tariff the outstanding business impact assessment and an assessment of constitutional, commercial, legal, financial and technical issues associated with the Victorian Large Scale Solar Feed-in Tariff. 	21
2.	The Department of Premier and Cabinet should develop and apply criteria and guidelines for classifying material as Cabinet-in-Confidence to avoid waste and duplication in the subsequent implementation and delivery of approved programs.	21
3.	The Department of Primary Industries should complete a comprehensive business case for the Victorian Large Scale Solar Project and the Solar Systems Project.	30

Submissions and comments received

In addition to progressive engagement during the course of the audit, in accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Premier and Cabinet, the Department of Primary Industries, the Department of Business and Innovation, and Sustainability Victoria with a request for submissions or comments.

Agency views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report. Their full section 16(3) submissions and comments, however, are included in Appendix A.

1 Background

1.1 Introduction

Fossil fuels have been a cheap and reliable power source for nearly a century. The Latrobe Valley has enough brown coal deposits to continue producing electricity for around 500 years at current usage levels. However, growing community and scientific concern about the impact of fossil fuels on the environment and climate has led to an increased focus on using sources of renewable energy to produce electricity sustainably.

Around 96 per cent of the electricity consumed by Victoria is generated from fossil fuels, with brown coal accounting for around 90 per cent and gas around 6 per cent. Brown coal produces around 55 per cent of the state's greenhouse gas emissions.

Sources of renewable energy

Renewable energy is generated using resources that ongoing natural processes can rapidly replace. Renewable resources include the sun, wind, water flows, organic matter and the earth's heat.

Around 3.9 per cent of Victoria's electricity generation comes from renewable sources. Figure 1A summarises the main sources of renewable energy available.

Figure 1A
The main renewable energy sources available

Source	Description
Biomass	Biomass is the conversion of organic matter into electricity using a variety of technologies. Generation tends to be small scale and best suited to local applications.
Geothermal	Geothermal energy uses heat from the earth's interior for small- and large-scale applications. Geothermal energy has the potential to provide a significant portion of base load energy. A large-scale demonstration project is under development in Victoria.
Hydro	Hydro-electricity is the conversion of flowing water into electrical energy, often using dams to store the water. Generation is highly dependent on rainfall.
Solar	Electricity is generated from solar energy using either thermal heat that drives a turbine or directly using photovoltaic cells. Solar energy is one of the most expensive forms of renewable energy, but this cost is currently falling.
Wave and tidal	Wave energy is captured by either fixed or floating devices that convert the motion of waves to electricity. Tidal energy systems usually use underwater turbines to capture the energy of the flooding or ebbing tide. Victoria has an excellent wave resource along its south west coast but limited opportunities to capture tidal energy.
Wind	Wind energy is the use of wind to drive a generator to produce electricity. It is a proven technology and Victoria has abundant potential wind resources. Wind energy is one of the cheapest forms of renewable energy.

Source: Victorian Auditor-General's Office, based on information from the Department of Primary Industries.

1.2 Relative cost and capacity factors

Many forms of renewable energy are more expensive than fossil fuels, and the output they generate varies.

The installed capacity of an energy generation facility is generally expressed in megawatts, while generation output is usually expressed in megawatt hours or gigawatt hours. Figure 1B shows the approximate long run marginal cost per megawatt hour of energy produced from each energy source. It also shows the ratio of each generator's output over its maximum potential—that is, if it was operated to its maximum possible output every hour of the year, also referred to as the 'approximate capacity factor'.

The form of electricity generation with the lowest capacity factor is gas, with a rate of 2 per cent. This could be as high as 90 per cent, however, the associated high costs this would require, prevent this. Energy generators use open cycle gas turbines only in times of peak demand because they can respond quickly to increased demand but at high cost.

Solar energy is the most expensive source of electricity, and has the third lowest capacity factor of the renewable energies. The most cost-effective energy type with the highest capacity factor is brown coal, although this also contributes significantly to greenhouse gas emissions.

Figure 1B
Approximate long run marginal cost and capacity factors

Energy type	Cost per megawatt hour ^(a) (\$)	Capacity factor ^(b) (per cent)
Gas (open cycle gas turbine)	65–96 ^(c)	2–90
Hydro-electricity	60–150	15 ^(d)
Solar (utility scale photovoltaic)	190	20–22
Wave and tidal	unknown ^(e)	25–30
Wind	80–120	30
Geothermal	70–87 ^(f)	80–90 ^(g)
Brown coal	35	80–90
Biomass	70–158	~ ^(h)

(a) The long run marginal cost establishes the cost of generating one megawatt hour of electricity. The costs may vary for particular situations, based on a range of factors including technology type and site conditions.

(b) The approximate capacity factor is the ratio of the annual energy generation to the maximum possible generation if the plant operated at full power every hour of the year.

(c) Cost of gas is dependent on the form of energy generation technology used.

(d) Capacity factor varies depending on rainfall and dam storages. The Snowy Hydro scheme has a capacity factor of 15 in years of average rainfall.

(e) The cost per megawatt hour is unknown as the technology is still being developed, and there is no single type in use.

(f) This technology has not been deployed in the state and transmission infrastructure costs are likely to be substantial.

(g) Capacity factor is theoretical. In practice it has been considerably lower.

(h) Capacity factor varies depending on site and fuel type.

Source: Victorian Auditor-General's Office, based on general market information.

Renewable energy output levels

In 2009, Victoria's renewable energy was generated from wind, biomass, hydro-electric and solar sources. Generation from these sources accounted for 3.9 per cent of Victoria's electricity consumption. Figure 1C shows the amount of generation as a percentage of total electricity consumption, by renewable source.

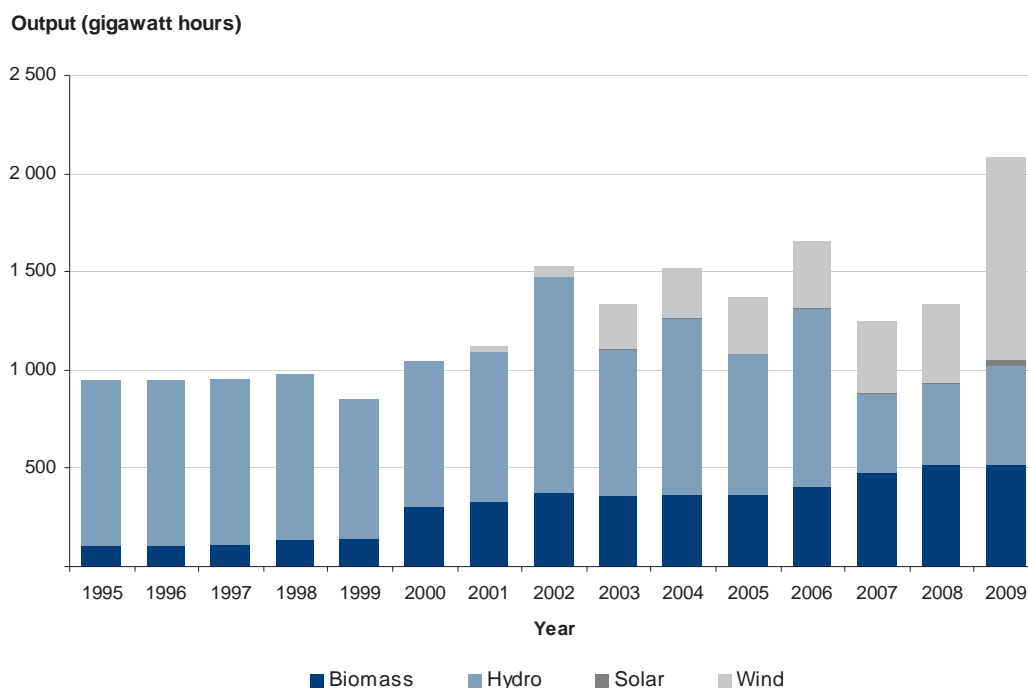
Figure 1C
Victoria's renewable electricity generation, 2009

Renewable energy source	Electricity generated (gigawatt hours)	Contribution to total electricity consumption (per cent)
Wind	1 027.84	1.93
Biomass	525.15	0.99
Hydro-electricity	500.40	0.94
Solar	26.40	0.05
Total	2 079.79	3.91

Source: Victorian Auditor-General's Office, based on information from Sustainability Victoria.

Figure 1D shows the renewable energy generated in Victoria since 1995. Hydro-electricity has produced a substantial amount of the renewable energy throughout the period. Generation from biomass and wind in particular, has increased over the last decade. Only a small amount of solar energy has been generated.

Figure 1D
Renewable electricity generated from all sources, 1995–2009



Note: Final data for 2010 will not be available until mid-2011.

Source: Victorian Auditor-General's Office, based on information from Sustainability Victoria.

There are challenges in producing and using more renewable energy. Meeting the variable demand for electricity in a reliable manner requires the precise matching of supply to total customer demand. This includes the requirement to produce base load power—the amount of power required to meet minimum demand.

While power from some renewable energy sources, such as wind and solar, is variable, all renewable energy sources have the potential to contribute to base load power. For example, new management techniques that involve wind energy prediction are now being used to mitigate the uncertainty surrounding wind energy supply in the national grid.

1.3 Facilitating development of renewable energy

Victoria has a privately owned energy system. Part of the government's role is to facilitate private sector development of new energy supplies, which it does through a range of activities. These include:

- funding research and development, deployment, demonstration and large-scale renewable energy projects
- developing market-based measures to drive renewable energy development
- providing information and data for prospective energy developers
- providing project facilitation assistance, such as site location services, advice on infrastructure and utility requirements, or statutory approvals coordination.

Since around 2001, the government has spent or committed around \$272 million on developing renewable energy technologies, or attracting investment. The Department of Primary Industries (DPI) is responsible for around \$261 million, Sustainability Victoria (SV) funds around \$7.1 million for the Renewable Energy Support Fund, while the Department of Business and Innovation (DBI) (formerly the Department of Innovation, Industry and Regional Development) has provided grants totalling around \$4.4 million.

1.3.1 Roles and responsibilities

The Department of Premier and Cabinet (DPC), DPI and DBI are the departments responsible for policy development and facilitating renewable energy development, while SV works with the state and local governments, and across all industry sectors, to promote and encourage environmental sustainability.

Department of Premier and Cabinet

DPC, through its Climate Change Branch, is responsible for whole-of-government climate change policy and strategy, focusing on longer-term issues and the economic, environmental and social impacts of climate change. The Climate Change Branch led the development of, and is responsible for, coordinating implementation of *Taking Action for Victoria's Future: Victorian Climate Change White Paper – The Action Plan* (the White Paper).

Department of Primary Industries

DPI is responsible for the policies and market-based incentives that guide renewable energy development, related research and development and activities aimed at demonstrating and using new technologies. DPI makes direct public sector investments of over \$161 million through the Energy Technology Innovation Strategy and is responsible for the \$100 million Victorian Large Scale Solar Project.

Department of Business and Innovation

DBI is the lead agency for economic and regional development. It attracts and facilitates investment, and provides a range of project facilitation assistance services to renewable energy project proponents.

Sustainability Victoria

SV collects, analyses, and provides data, information and advice to the government, industry and the community on renewable energy development. It also funds and offers advisory services for small-scale and residential sustainability activities, and undertakes some renewable energy research and development, and demonstration projects.

1.3.2 Renewable energy policy

A range of policies were developed between 2002 and 2010 to guide renewable energy development, including the establishment of targets for renewable energy generation.

Figure 1E
Renewable energy policies, 2002–10

Policy	Summary
'Sustainable State' election commitments, 2002	The then government released its 'Sustainable State' election commitments to increase the amount of Victoria's electricity consumption from renewable sources, and to increase the development and construction of wind energy facilities.
<i>Victorian Greenhouse Strategy</i> , 2002	The three-year strategy aimed to reduce greenhouse gas emissions from the stationary energy sector, while continuing to provide access to secure, efficient and affordable supplies of energy.
<i>Greenhouse Challenge for Energy</i> , 2004	The position paper proposed a policy framework with initiatives to support a national emissions trading scheme, cleaner coal technologies, renewable energy and energy efficiency. It also aimed to facilitate Victoria's transition to a carbon-constrained future to provide investment certainty.
<i>Renewable Energy Action Plan</i> , 2006	The plan outlines actions to accelerate renewable energy development. Its objectives include helping to meet Victoria's future energy needs in a carbon-constrained future, and supporting the development of a Victorian renewable energy industry by providing long-term investment certainty for renewable energy projects.

Figure 1E
Renewable energy policies, 2002–10 – continued

Policy	Summary
<i>Victoria's Future Energy</i> , 2010	This statement sets out the actions needed to move Victoria away from its reliance on coal, oil and gas to generate energy. It describes energy issues and challenges, and outlines future energy options. It also sets out the government's role in the security and sustainability of future energy, and in keeping energy costs as low as possible.
Climate Change White Paper—Action 3, 2010	'Action 3 – Making Victoria the solar state' sets new solar energy generation targets. An implementation plan, released in October 2010, provides further details on funding and time lines and on how the government intends to work with business, industry and the community to implement initiatives outlined in the Action Plan.

Source: Victorian Auditor-General's Office.

1.3.3 Renewable energy legislation

Prior to the Victorian Renewable Energy Target scheme being incorporated into the Australian Government's expanded Renewable Energy Target scheme, the main legislation governing the development of renewable energy was the *Victorian Renewable Energy Act 2006*. It aimed to promote the development of renewable energy generation by establishing a scheme where energy generators can acquire and trade renewable energy certificates. These certificates are a form of currency and act as an incentive to develop the renewable energy industry. Commonwealth legislation now governs these aspects of renewable energy development.

Other legislation related to renewable energy includes the *Geothermal Energy Resources Act 2005* and the *Electricity Industry (Wind Development) Act 2004*.

A key element of Action 3 of the White Paper is the development of the Victorian Large Scale Solar Feed-in Tariff. Implementing the tariff will require new legislation. According to the White Paper, a Bill was to be introduced to Parliament in mid-2011 so that the feed-in tariff could start in late 2011.

1.4 Audit objective and scope

We examined how well the development of renewable energy that can be deployed to generate electricity to feed into the state's grid, has been facilitated. The audit reviewed the activities of DPC, DPI, DBI and SV. It assessed the effectiveness of:

- investment attraction and facilitation programs
- renewable energy development and investment criteria
- systems and processes used to manage and monitor renewable energy programs
- inter-agency arrangements and coordination.

1.4.1 Audit approach

We reviewed whether renewable energy investment attraction and facilitation programs have achieved their stated objectives and targets. We also examined whether renewable energy projects were soundly based and had clear objectives and targets. We examined whether sound and transparent processes were used to select and manage renewable energy projects and whether there were coordinated inter-agency arrangements for renewable energy development and investment facilitation.

The audit was performed in accordance with the Australian Auditing and Assurance Standards. The total cost of this audit was \$415 000.

2 Renewable energy development incentives

At a glance

Background

As Victoria has a privatised energy sector, the government does not have a direct role in energy generation. Rather, its role is to facilitate the private sector's development of energy. For renewable energy, the key facilitation mechanism it used was to provide incentives through renewable energy target schemes and feed-in tariffs.

Conclusion

Using targets to facilitate the development of renewable energy has not been effective. The absence of clear plans on how the targets will be achieved has contributed to this situation and puts at risk the future achievement of solar energy targets.

Findings

- Setting the targets and planning for how they would be achieved lacked rigour.
- No assessment has been undertaken to support and substantiate the 2010 solar energy targets or time frames for achieving them. There has also been no assessment of the full costs and benefits of achieving the solar targets.
- Renewable energy generation targets established in 2002 have not been met by their original target date of 2010. Renewable energy generation has increased by only 0.3 per cent over seven years, compared to a target of a 6 per cent increase.
- The interim 2014 solar targets are not likely to be achieved given the lack of available and planned generating capacity.
- The cost of achieving the 2 500 gigawatt hour target is estimated at \$5.6–\$8 billion in nominal terms over 27 years, or \$2.4–\$3.4 billion in net present value (NPV). The direct cost is estimated at \$842 million in NPV.

Recommendations

The Department of Premier and Cabinet should undertake:

- a cost-benefit analysis for the solar energy targets and the Victorian Large Scale Solar Feed-in Tariff
- the outstanding business impact assessment and an assessment of constitutional, commercial, legal, financial and technical issues associated with the Victorian Large Scale Solar Feed-in Tariff.

2.1 Introduction

As Victoria has a privatised energy sector, part of the government's role is to facilitate the private sector's development of energy. For renewable energy, the key facilitation mechanism it used was to provide incentives through renewable energy target schemes and feed-in tariffs.

Renewable energy target schemes involve the government setting a target for the proportion of energy that must come from renewable sources. By requiring energy providers to source specific amounts of their energy from renewable sources, target schemes aim to create incentives for energy generators to develop new sources of renewable energy to meet this demand.

Feed-in tariffs aim to provide energy generators with an incentive to generate renewable energy by providing them with a premium rate for the electricity from renewable energy sources that they feed into the electricity grid.

Renewable energy targets for 2010 were initially established in 2002, but subsequently extended to 2016. A renewable energy target scheme was implemented in 2007 to provide incentive for energy generators to develop new sources of renewable energy. Further targets were also established in 2010, specifically focused on solar energy, along with a commitment to a feed-in tariff to provide incentives for large-scale solar energy development.

2.2 Conclusion

Using targets to facilitate the development of renewable energy has not been effective. The original target of achieving 10 per cent of energy from renewable sources by 2010 has not been met. Around 3.9 per cent of Victoria's energy currently comes from renewable sources.

Limited planning, especially a lack of clarity about how the targets would be achieved, contributed significantly to the targets not being met. Similar limitations are evident with the 2010 solar energy targets. There was no business case or cost-benefit analysis to support the planning process.

These limitations mean achieving the targets within the specified time frames is not likely.

2.3 ‘Sustainable State’ renewable energy targets

In 2002, the then government—through its ‘Sustainable State’ election statement—committed to:

- increase the share of Victoria’s electricity consumption from renewable sources from 4 per cent to 10 per cent by 2010 (subsequently extended to 2016)
- facilitate the development and construction of up to 1 000 megawatts (MW) of wind energy facilities in environmentally acceptable locations throughout Victoria by 2006.

The basis for those targets is unclear. Before establishing the targets, no assessments were undertaken to determine whether the targets and time frames were practicable. Neither the Department of Primary Industries (DPI) or the Department of Premier and Cabinet (DPC) could provide a plan detailing how the targets would be achieved. Due to the absence of this information, it is not possible to assess the effectiveness of planning for, or the robustness of, the targets.

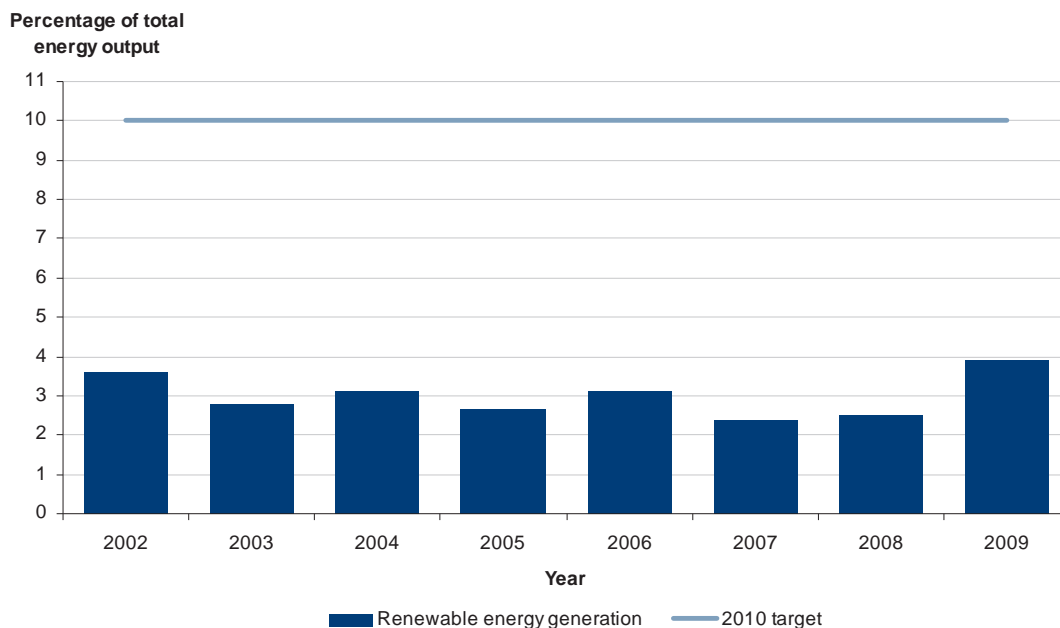
2.3.1 Progress against renewable energy targets

The ‘Sustainable State’ renewable energy targets ceased in 2010 when Victoria joined an Australia-wide expanded Renewable Energy Target (eRET) scheme. However, by the end of 2009, Victoria had not met its 2006 wind energy target and had not increased its share of renewable energy to 10 per cent by the original target date of 2010.

There has been little increase in the proportion of renewable energy generated in Victoria. As Figure 2A shows, when the targets were established in 2002, Victoria’s share of electricity generated from renewable sources—as a percentage of Victoria’s electricity consumption—was around 3.6 per cent. At the end of 2009, this percentage had increased by only 0.3 per cent, to around 3.9 per cent.

In 2007, the time frame for increasing the share of Victoria’s electricity consumption from renewable sources to 10 per cent was extended from 2010 to 2016. A range of factors, such as the interests of existing generators, the renewable energy industry and Victorian electricity consumers, were considered in extending the target. However, the extension occurred primarily to alleviate the concerns of brown coal generators that the 10 per cent target would deliver too much renewable energy generation too quickly, which would reduce wholesale electricity prices and adversely affect existing generators.

Figure 2A
Renewable energy generation as a percentage
of total Victorian electricity consumption

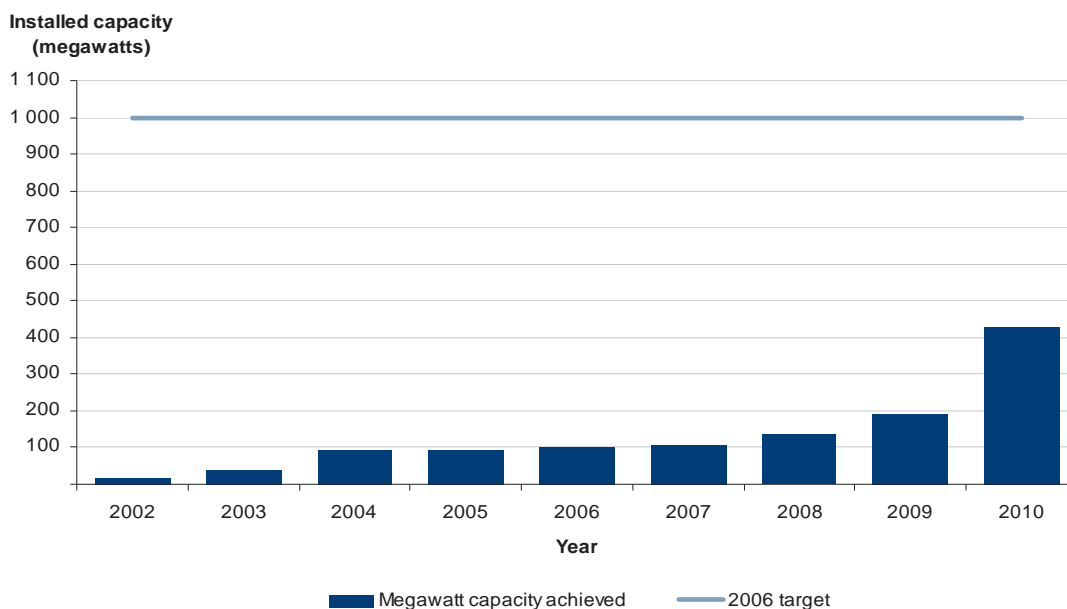


Note: Final data for 2010 will not be available until mid-2011.
Source: Victorian Auditor-General's Office, from data supplied by Sustainability Victoria.

The development and construction of wind energy facilities has also fallen well short of the 1 000 MW target. As Figure 2B shows, in 2002 Victoria had around 18 MW of wind energy facilities. By the end of 2006—the target achievement date—only 104 MW of wind facilities had been developed and constructed. This represents only 10.4 per cent of the target, or a deficit of 896 MW.

Data for the end of 2010 shows that, four years after it was expected that there would be 1 000 MW of wind energy, only 428 MW, or 42.8 per cent of the target, was delivered.

Figure 2B
Developed and constructed wind energy facilities



Source: Victorian Auditor-General's Office, from data supplied by Sustainability Victoria.

2.3.2 Factors impacting the achievement of targets

Several factors outside of the state's control have affected renewable energy generation.

Drought conditions after 2002 reduced the amount of hydro-electric generation. This peaked in 2002 when water was released from dams, resulting in the generation of 1 103 gigawatt hours (GWh). This represented 2.6 per cent of total generation, compared to 500 GWh, around 1 per cent of total generation, in 2009. In addition, a global shortage of construction materials, including wind turbines, impacted projects during 2008 and a drop in Renewable Energy Certificate prices adversely affected investment in 2009. However, these events occurred after the government recognised its 2002 targets would not be met.

The most significant impact on achieving the renewable energy targets was the design of the targets themselves, and the absence of a clear plan to achieve them.

In establishing the 2002 state targets, Victoria relied in part on the Australian Government's Mandatory Renewable Energy Target (MRET) scheme, which set a target in 2001 of 9 500 GWh by 2020. To achieve the state targets a higher MRET was required and the state argued for an increased target of 19 000 GWh during a 2003 review of the scheme. However, following the 2003 MRET review, the Australian Government did not increase the MRET.

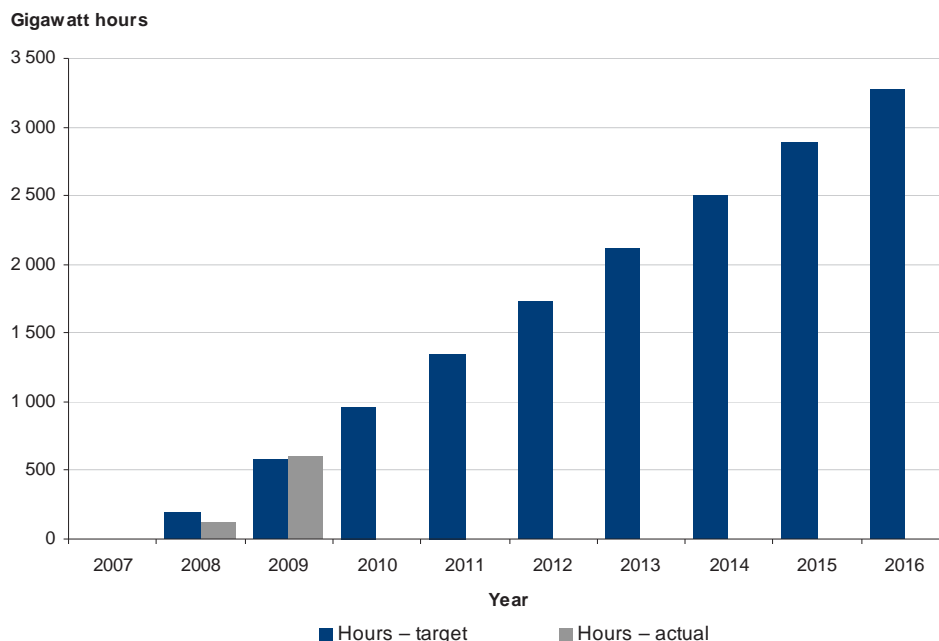
The Victorian Renewable Energy Target scheme

In November 2005, the Victorian Government was advised that Victoria was unlikely to meet its renewable energy targets and that private sector investment in renewable energy in Victoria would cease by 2007. To address Victoria’s lack of progress against its own targets, the government established the Victorian Renewable Energy Target (VRET) scheme in January 2007.

The VRET scheme required electricity retailers and wholesalers to source a proportion of their electricity from eligible renewable energy sources. This was intended to contribute to the achievement of the 10 per cent renewable energy target by the revised date of 2016.

As Figure 2C shows, in 2008, 125 GWh of renewable energy was produced—below the target of 193. However by 2009, VRET was on track to meet its annual targets when around 599 GWh was produced, against a target of 578 GWh.

Figure 2C
Progress against the Victorian Renewable Energy Target scheme



Note: Targets for 2007 were set at zero as this was the first year the scheme operated.
Source: Victorian Auditor-General's Office, based on information from the Essential Services Commission.

VRET transitioned to the Australian Government’s eRET scheme in 2010, after operating for three years. Under eRET, there are no state-specific targets.

Modelling commissioned for DPI at the time of the transition forecast a shortfall of investment in renewable energy in Victoria under eRET, relative to the expected outcomes under VRET for the period 2010–14. This is partly due to a comparatively flatter trajectory in the early years of the eRET scheme, and investment in renewable energy flowing to regions outside Victoria.

The modelling also predicted that by 2020 the state would generate more than double the VRET target of 3 274 GWh. However, given that there are no longer state-specific targets, progress against the original state-level VRET goals or potential future gains is no longer an obligation. Nevertheless, Sustainability Victoria continues to track renewable energy generation.

2.4 Solar energy generation targets

In July 2010, additional renewable energy generation targets were established. Through Action 3 of *Taking Action for Victoria's Future: Victorian Climate Change White Paper – The Action Plan* (the White Paper), a commitment was made to increase electricity supply from large-scale solar power to 5 per cent by 2020—around 2 500 GWh. It also established an interim target of 500 GWh by 2014.

The Victorian Large Scale Solar Feed-in Tariff (VLSSFiT) was also committed to, as an incentive for private sector investment. The design of the VLSSFiT has not been determined; however the White Paper states that the VLSSFiT will be outside the eRET scheme.

2.4.1 Developing the solar energy targets

Facilitating investment to increase Victoria's solar energy generation from around 26 GWh in 2009 (0.05 per cent of total electricity generation) to 2 500 GWh (5 per cent of total electricity generation) by 2020 requires effective planning. The targets need to be practicable, and mechanisms that provide financial incentives, such as the VLSSFiT, needed to be thoroughly assessed to provide assurance that a proposal was well considered, worthwhile, and enabled a fully informed policy choice.

The solar energy targets underpin the effort to facilitate solar energy development. Despite their importance, DPC was unable to demonstrate that an assessment was undertaken to support or substantiate the targets, or the time frames for achieving them. DPC was responsible for developing the White Paper and associated targets, but could not demonstrate that the targets were practicable. Like the 2002 'Sustainable State' targets, the lack of supporting information means that it is not possible to assess the effectiveness of planning for, or the robustness of, the targets.

2.4.2 Victorian Large Scale Solar Feed-in Tariff

The key incentive mechanism for facilitating private sector investment in solar energy generation is the VLSSFiT. While the government endorsed the development of the VLSSFiT, there was limited analysis of the associated costs and benefits, principally because the previously requested Business Impact Assessment (BIA) had not been undertaken.

Preliminary estimates of the cost of implementing the VLSSFiT, provided by DPC, show that achieving the 2 500 GWh target by 2020 would cost \$5.6–\$8 billion in nominal terms, over 27 years, or \$2.4–\$3.4 billion, in net present value terms (NPV), using a discount rate of 7 per cent. This cost includes network, administration and capital costs. While not a direct cost to the state, advice from DPC and DPI indicated that this cost would be borne by consumers. This represents an increase in average annual household electricity bills of \$23–\$47 each year, over the lifetime of the scheme.

In addition, the direct cost of the VLSSFiT is estimated by DPC to be \$842 million in NPV, using a discount rate of 7 per cent. DPC could not advise what the direct cost included, although their assessment indicates that electricity consumers will bear around \$750 million of these costs.

While there is no specific guidance established for analysing such 'off budget' public policy initiatives, the Department of Treasury and Finance (DTF) investment lifecycle guidelines for direct investments in excess of \$5 million provide a reference point. These guidelines require a strategic assessment of the business needs and the likely solution—an options analysis to determine which options will provide the best solution—and development of a business case to determine if there is a compelling case for investing. This situation again illustrates the gap in the accountability framework when considering and approving 'off budget' initiatives. The same issue was raised in our November 2009 report, *Towards a 'smart grid'—the roll-out of Advanced Metering Infrastructure* (2009–10:3).

Business case and impact assessment

DPC did not develop a business case to support the VLSSFiT proposal. This is contrary to specific advice from DTF that one should be developed before committing to the scheme. Consequently, it is not evident that there was an adequate examination of the options, costs, time frames and risks, normally canvassed in a business case to allow decision-makers to assess if the preferred option best met the need.

The government also requested a BIA, outlining further detail on the proposed feed-in tariff scheme be completed for its consideration before endorsing the White Paper, as well as a full and rapid assessment of any constitutional, commercial, legal, financial and technical issues. This did not occur before the decision on the VLSSFiT was made. DPC advised that a BIA was not required before the government endorsed the VLSSFiT, as the government decided to delay the preparation of legislation to introduce the VLSSFiT. However, DPC could not provide evidence of the decision, and its advice cannot be verified.

No evidence was produced to demonstrate an effort to develop a business case or BIA to confirm the merits of the proposal since the decision to commit to the VLSSFiT was made. This is significant, given that neither DTF nor DPI—the department responsible for implementing the VLSSFiT—supported the proposal. Both departments recommended a smaller target—for DPI, this was 500 GWh by 2020. According to the White Paper Departmental Implementation Plan 7 – Large Scale Solar Project, DPI is responsible for completing a BIA.

The time line in Figure 2D shows key decision points in relation to the endorsement of the VLSSFiT.

Figure 2D
Time line for key decision points – Victorian Large Scale Solar Feed-in Tariff

Date	Description of decision point
19 March 2010	DPC briefs the Premier on options to increase large-scale solar capacity in Victoria.
14 April 2010	DPC briefs the Premier on options to pursue an LSSFiT. Briefing states that a completed BIA is required by June 2010.
7 June 2010	A submission on the LSSFiT is considered by government. A BIA is not included in the submission. DTF does not support the VLSSFiT and recommends a full cost-benefit analysis be undertaken, via development of a business case, before a final decision on the tariff is made.
1 July 2010	Government endorses VLSSFiT and solar targets of 2 500 GWh by 2020 with an interim target of 500 GWh by 2014. DPC is asked to prepare a submission with further detail on the proposed scheme, including a BIA and an assessment of constitutional, commercial, legal, financial and technical issues associated with the LSSFiT, for consideration in August 2010.
12 July 2010	Government endorses <i>Taking Action for Victoria's Future, Victorian Climate Change Paper – The Action Plan</i> , which outlines the new solar targets and the commitment to introduce a VLSSFiT under Action 3. No business case, cost benefit analysis, BIA or assessment of constitutional, commercial, legal, financial and technical issues was provided by DPC.
18 October 2010	Government endorses <i>Taking Action for Victoria's Future, Victorian Climate Change Paper – The Implementation Plan</i> . The plan states that the design of the feed-in tariff will be finalised following public consultation and the completion of a Regulatory Impact Statement.

Source: Victorian Auditor-General's Office.

Costs and benefits

The full costs and benefits of introducing the VLSSFiT and achieving the new solar targets have not been assessed. Despite DTF advice to conduct a cost-benefit analysis to quantify the budgetary risks, this analysis was not conducted by DPC.

Economic assessments

Both DPC and DPI assessed the expected economic impacts of the proposed VLSSFiT in the lead up to the release of the White Paper in July 2010. While not cost-benefit analyses, they provide indicative costs associated with implementing the feed-in tariff.

DPI's assessment focused on institutional arrangements fundamental to the success or failure of a feed-in tariff. It did not analyse the cost, feasibility or practicability of a feed-in tariff delivering the targets by the 2014 and 2020 time frames. The assessment and advice provided by DPI noted:

- A large-scale solar feed-in tariff (or a broader stimulus) would constitute a major and rapid investment program, involving substantial land-use change, community impact and financial cost.
- The total investment required to build 1 300 MW of solar energy facilities—the installed capacity required to generate 2 500 GWh per annum—could be more than \$8 billion. This would be in addition to substantial augmentations to the transmission grid—between \$0.5 and \$2.9 billion—which would constitute one of the largest infrastructure programs undertaken in Victoria. DPI has subsequently advised that based on proposals for the Victorian Large Scale Solar Project (VLSSP)—a proposed solar plant to be built in north-west Victoria—the costs may be in the range of \$5.2–\$6 billion. DPI was unable to provide evidence to substantiate this advice.
- The investment would be delivered by the private sector and funded by electricity consumers.
- The size of the investment would necessitate substantial analysis and careful consultation with the private sector, communities in north-west Victoria and the general public.

In 2010, among other elements of the White Paper, DPC commissioned modelling on the introduction of a feed-in tariff for large-scale renewable and/or low-emission technologies. The assessment considered the cost to business, households and government, the impact on gross state product, and the cost of emission abatement. The assessment noted that:

- while a feed-in tariff would result in greater use of low-emission technologies, it would lead to higher costs that would be passed on to electricity consumers
- estimated direct costs per annum for a feed-in tariff would rise from \$15.4 million in 2011, to \$103 million in 2014, and finally to \$308 million in 2020
- in NPV terms, total direct costs, excluding the administrative costs of the scheme, would be around \$842 million, of which \$750 million (89.1 per cent) will be borne by electricity consumers. DPC could not however identify these direct costs.

The lack of an assessment of the costs and benefits indicates significant uncertainty about the validity of the economic case for the targets and the VLSSFiT.

2.4.3 Achieving the solar energy targets

Apart from the incentive that the VLSSFiT may provide to achieve the solar energy targets, the private sector's ability to construct solar energy plants within the target time frames is also critical.

Advice provided by DPI in September 2010 indicated that, based on current and planned solar energy development, the achievement of the interim target of 500 GWh of solar energy by 2014 was doubtful.

When the development of the VLSSFiT was planned to help achieve the solar targets, the modelling assumed that the VLSSP would deliver around 345 GWh or 70 per cent of the interim 2014 target. However, it is unclear whether this, or the other existing solar initiative—the Solar Systems project—will count towards the solar targets.

While the former Victorian Government committed \$100 million (NPV at June 2009) to the VLSSP, this was contingent on the Australian Government contributing around \$250 million under its Solar Flagships Program. This will not be decided until the first half of 2011, so there is uncertainty about whether this project can contribute to the achievement of the targets.

If the Australian Government does contribute funding, DPI has advised that the VLSSP will generate Renewable Energy Certificates under the federal eRET scheme. This means it may not be eligible for the proposed VLSSFiT, and therefore is unlikely to contribute towards the 2014 interim solar target. This is because it will not provide any additional abatement, but instead contribute towards the achievement of the federal eRET target.

In addition, advice from DPI on the Solar Systems project—another large-scale solar project expected to generate around 270 GWh of electricity—indicates it will also generate Renewable Energy Certificates. It would therefore not be eligible for the VLSSFiT and may also not contribute towards achievement of the target. DPI does not expect any other project of a similar scale to be deliverable within the time frames required to achieve the 2014 target, meaning the capacity to achieve the 2020 target is not evident.

Barriers to implementation

An implementation plan for the White Paper, including the solar targets, was released in September 2010. During the audit we reviewed departmental implementation plans that outline the:

- rationale for the Climate Change White Paper initiative
- scope of the initiative
- priority actions and outputs
- governance and evaluation arrangements
- funding and resources.

The solar implementation plan was made Cabinet-in-Confidence as the White Paper Implementation Plan was being considered by the government before the November 2010 State Election. Consistent with established conventions, it is not accessible to program managers and also not available to the new government. Similarly, external advice, other planning work and advice provided by DPC and other departments on the solar targets and the feed-in tariff, prior to the change of government, is also classified as Cabinet-in-Confidence and not available to DPI, the agency responsible for implementing actions related to the solar targets.

Making these plans Cabinet-in-Confidence impedes program administration and implementation in the short-term and will require otherwise avoidable additional expenditure in managing the implementation. Should the new government wish to proceed with the initiative, further planning or implementation may be difficult without access to this documentation.

Introduction of the feed-in tariff relies on legislation that was scheduled to go before Parliament in mid-2011, to enable the scheme to commence in late 2011. Delays in enacting the legislation may compromise the implementation of the scheme as planned, and achievement of the solar targets.

Potential legal issues associated with introducing the targets, including a significant risk of constitutional invalidity, had also been noted by DPI. A full and rapid assessment of issues including any constitutional, commercial, legal, financial and technical issues was requested for the government's consideration, however this was not provided.

With the change of government, it is currently uncertain whether the initiatives will continue as planned or if the new government will introduce new targets and policies around renewable energy development.

Recommendations

1. The Department of Premier and Cabinet should undertake:
 - a cost-benefit analysis for the solar energy targets and the Victorian Large Scale Solar Feed-in Tariff
 - the outstanding business impact assessment and an assessment of constitutional, commercial, legal, financial and technical issues associated with the Victorian Large Scale Solar Feed-in Tariff.
 2. The Department of Premier and Cabinet should develop and apply criteria and guidelines for classifying material as Cabinet-in-Confidence to avoid waste and duplication in the subsequent implementation and delivery of approved programs.
-

3 Projects and programs for facilitating renewable energy development

At a glance

Background

In addition to renewable energy target schemes and feed-in tariffs to facilitate the development of renewable energy, government agencies also directly invest in renewable energy technology projects.

Conclusion

Funding for projects focused on research and development, demonstration and deployment, has contributed to the facilitation of renewable energy development. With the exception of two large-scale solar projects, where the investment need has not been demonstrated, projects have a sound basis, were transparently selected, and have been well managed.

Findings

- Renewable energy projects have generally been well managed and the funding well administered.
- With the exception of the two large-scale solar projects, scheduled to complete construction in 2015, the projects are soundly based, and have achieved or are achieving their objectives.
- Notwithstanding the lack of a demonstrated basis for the two large-scale solar projects, processes for assessing renewable energy project proposals and selecting projects were transparent and have been applied consistently by all agencies across the projects audited.
- Projects and contracts examined had been effectively managed.

Recommendation

The Department of Primary Industries should complete a comprehensive business case for the Victorian Large Scale Solar Project and the Solar Systems Project.

3.1 Introduction

In addition to renewable energy target schemes and feed-in tariffs to facilitate the development of renewable energy, government agencies also directly invest in renewable energy technology projects to overcome investment barriers—such as cost and demonstrating viability—if development was left entirely to the market.

The Department of Primary Industries (DPI) and the Department of Business and Innovation (DBI) do this by funding research and development, and by the demonstration and deployment of new technologies. Figure 3A describes these activities.

Figure 3A
Types of renewable energy projects and programs

Type	Description
Research and development	A process intended to create new or improved technology that can provide a competitive advantage at the business, industry, or national level.
Demonstration	The final step to address remaining technology risks around integration and scale-up, once the technology has been proven at pilot plant scale.
Deployment	The rollout of mature technologies, with support from market stimuli and government policy.

Source: Victorian Auditor-General's Office.

Sustainability Victoria (SV) and DBI also administer smaller-scale grants for renewable energy projects, through various funding initiatives.

3.2 Conclusion

Funding for projects focused on research and development, demonstration and deployment has contributed to the facilitation of renewable energy development. With the exception of two large-scale solar projects, where the investment need has not been demonstrated, projects have a sound basis, were transparently selected and have been well managed.

3.3 Renewable energy projects

Even with good planning and project management, the uncertain nature of some renewable energy projects, particularly those in the research and development phase, means that not all will ultimately succeed or contribute to renewable energy development.

Collectively, DPI, DBI and SV have directly invested around \$272 million in developing renewable energy technology since 2001, as part of the state's facilitation role.

Given this significant investment and the unproven nature of many of the technologies for large-scale energy generation, sound and transparent processes to support investment decisions are required. Specifically, there needs to be:

- a clear and evidence-based rationale for projects
- transparent selection
- clear project objectives and targets
- effective contract and project management.

To determine how effectively such investments have been managed, the audit examined projects funded under the Energy Technology Innovation Strategy (ETIS), the Renewable Energy Support Fund (RESF) and grants managed by DBI. The audit also examined the management of the Solar Systems/Silex and Victorian Large Scale Solar Project (VLSSP) projects.

Figure 3B
Renewable energy projects and programs by agency

Project/program	Overview	Status	Amount (\$)
Department of Primary Industries			
Energy Technology Innovation Strategy (ETIS 1 & 2):	Tranches of funding to a range of low emissions technology initiatives		
• Centre for Energy and Greenhouse Technologies	Private company that coordinates the development and implementation of pre-commercial energy efficient technologies	All public funding has been provided	30 million
• Sustainable Energy Research and Development grants (Round 1)	Funding for research into four clean energy research and development projects	Final report for one project completed to date	10 million
• Sustainable Energy Large Scale Demonstration project	Funding for development of commercial clean energy	Greenearth Energy is the only eligible project (\$25 million) negotiating a contract. Remainder of funds redirected to a planned ETIS 3	72 million
Solar Systems/Silex project	Large-scale solar energy project	Project taken over by Silex in February 2010 from Solar Systems. Currently in stage one	50 million
Victorian Large Scale Solar project	Development of large-scale solar energy generator	Contract awarded to preferred proponent in September 2010	100 million

Figure 3B
Renewable energy projects and programs by agency – *continued*

Project/program	Overview	Status	Amount (\$)
Sustainability Victoria			
Renewable Energy Support Fund (RESF)	Grants to develop small-scale renewable energy technologies	13 out of 14 projects completed or under construction	8.45 million
Department of Business and Innovation			
Community Regional Industry Skills Program 1 & 3	Grants to develop wind farm infrastructure and regionally skilled workers	Completed and evaluated	30 000 and 200 000
Enterprise Development Grant	Grant to develop wind farm infrastructure and regionally skilled workers	Completed and evaluated	60 000
Regional Investment Initiative	Grant to develop wind farm infrastructure and regionally skilled workers	Completed and evaluated	250 000
Victorian Science Agenda (VSA) Investment Fund	Support for market-focused collaborative projects between business and research organisations	Victoria-Suntech Advanced Solar Facility – underway VSA evaluated	3 million
Regional Infrastructure Development Fund (RIDF)	Hepburn Community Wind Park	Underway RIDF evaluated	750 000

Source: Victorian Auditor-General's Office, based on information from agencies.

Renewable energy projects have generally been well managed and the funding well administered.

3.3.1 Project proposals

The projects funded under ETIS, the RESF and the DBI grants were soundly based, with clear objectives and targets and clear alignment with government policy. The exceptions were the two large-scale solar projects: the Solar Systems/Silex, and the Victorian Large Scale Solar Project (VLSSP) projects.

Figure 3C
Solar Systems/Silex project

The Solar Systems/Silex project started in 2006, with a request to the government from the original project partners to contribute \$50 million. The benefits of the proposal were outlined in terms of the development of a new industry in Victoria, but there was no assessment of the need for the Solar Systems project. Solar technology was not a priority area in line with the strategic direction of DBI (then the Department of Innovation, Industry and Regional Development).

Independent technical and commercial reviews of the Solar Systems project were undertaken by DBI as part of its initial assessment, which noted issues with the project's viability. The technical review identified risks relating to demonstration and deployment of the new heliostat technology that had not been deployed commercially anywhere else in the world. It stated that the technology was unlikely to be commercially competitive with wind power in Victoria in the foreseeable future. It also stated that it was unlikely that power could be produced at current commercial rates, even after considering income from a renewable energy target scheme—embedded generation network rebates—and requested Commonwealth and state grants.

The commercial review noted that the proposal relied heavily on one project partner, who was providing financial and project delivery support and that, due to the uncertain future of the project partnership, this raised serious concerns about the likelihood of the project proceeding.

Before the government endorsed and approved the project, without a business case, it was also advised that the proposal did not fit key Investment Support Program criteria because:

- the investment would not necessarily add to Australia's productive capacity, given that solar power was unlikely to be competitive in the energy market for the foreseeable future; and that the only output would be intellectual property licensing
- there was not a strong business case, given that the commercial and technical reviews of the proposal gave cautious support only.

Source: Victorian-Auditor General's Office.

The main rationale for endorsing and approving the Solar Systems project was that the technology would be lost to Victoria if it was not funded.

In 2006 one of the project partners disassociated itself from the project, thus increasing the financial and project delivery risks. While Solar Systems technology had significant potential, based on DPI's assessment, the company had difficulty raising funds from early 2008 onwards, and eventually went into voluntary administration in September 2009. Silex Systems offered to take over the project in February 2010. Following this, DPI commissioned a second round of independent commercial and technical reviews which found that the technology challenges faced by Silex were similar to those previously identified for Solar Systems. Given that the previously identified commercial and technical risks eventuated, and that the expected benefits of the project have not yet been realised, the new project risks relating to Silex remain.

Figure 3D
Victorian Large Scale Solar Project

In June 2008, the then government requested DPI to investigate options, and their implications, for developing two to four large-scale solar energy generators in Victoria by 2015. This was subsequently revised to consider facilitating the development of one new generator.

There was no documented assessment that considered the need for the project, or demonstrated its alignment with government policy. Nor was a business case completed before the government approved its contingent investment of \$100 million.

The government received advice on options to facilitate the investment, rather than advice on whether a large-scale solar project was the best option to achieve a particular need.

Before it approved the proposal, the government also received advice about the costs and risks of investing in the Victorian Large Scale Solar Project. Both the Department of Treasury and Finance and the Department of Premier and Cabinet advised that the costs and risks of the development of a large-scale solar generator would outweigh the benefits. They advised that:

- technology specific funding is inconsistent with efforts to streamline climate change policies
- the policy would displace lower cost technologies without delivering any additional greenhouse gas abatement
- biomass generation was a better option than solar for diversifying Victoria's renewable energy base, as it was more competitive and had greater market penetration
- there was a risk that the successful tenderer would seek additional funds from government in the future.

Source: Victorian Auditor-General's Office.

In September 2010 the preferred proponent was selected for VLSSP funding. A condition of Victorian Government funding being provided is that the project secures funding through the Australian Government's Solar Flagship Program. This will be announced in the first half of 2011. This funding is not assured and the Department of Treasury and Finance has raised further concerns that there is a real risk the project may not be preferred by the Commonwealth.

3.3.2 Selection processes and project management

With the exception of the Solar Systems/Silex project, processes for selecting and assessing the renewable energy project proposals examined were transparent and applied consistently across the projects for which DPI, DBI and SV are responsible. Common among the projects was the use and application of selection criteria, and independent assessment panels to select projects to fund.

Projects and contracts examined as part of the audit were effectively managed, with contracts specifying clear funding conditions and reporting requirements, as well as allowing the state to withdraw from the contracts if agreed milestones are not met. Several instances were identified where contract conditions, including termination, had been enforced because milestones had not been met. Also evident was the application of lessons learned from contract management issues, to new contracts.

3.3.3 Project and program outcomes

Department of Primary Industries funded projects

The Energy Technology Innovation Strategy (ETIS) is an 'umbrella' under which a number of separate projects have been established. There is no documented strategy for the program as a whole. While individual ETIS projects have their own reporting frameworks, which have indicated their successful completion, there were no overarching performance measures or evaluation framework established for ETIS at the outset. As such it is not possible to assess the outcomes and total value of the projects to date, or the effectiveness of the ETIS program as a whole.

DPI advised that an ETIS evaluation plan is under development, and that this will most likely address the future direction of the program.

Department of Business and Innovation funded projects

The Victorian Science Agenda Investment Fund and Regional Infrastructure Development Fund grant programs have been evaluated as a whole, reporting that the expected benefits have been realised. The objectives of these programs relate to strengthening the state's science and technology base, and supporting capital works in regional communities, respectively.

As part of the Community Regional Industry Skills Program (CRISP) evaluation, DBI reported that its investments had met their stated objectives, and the expected targets and benefits of the projects had been realised. The evaluation also noted a high level of satisfaction by companies with the investment facilitation practices of DBI in the context of the CRISP program.

Sustainability Victoria funded projects

There are currently 14 projects funded by the Renewable Energy Support Fund. Nine of the ten capital works projects and all four of the access/capacity building projects have been completed or are under construction to date.

3.4 Inter-agency arrangements for ongoing renewable energy programs and reporting

There have been a number of inter-departmental committees established to oversee the major programs and ensure ongoing communication between agencies. At officer level, a renewable energy forum operates as an informal discussion forum with its agenda driven by particular topics. It meets every six weeks and has been effective in bringing together key government project officers and directors to discuss renewable energy issues, projects and programs.

Activities undertaken in relation to data collection, analysis and reporting have developed over time; however, arrangements and responsibilities of agencies are not documented. This presents risks around accountability for actions, roles and responsibilities. DPI and SV have recently recognised the need to formalise processes for interagency data collection, analysis and reporting through a documented arrangement.

Recommendation

3. The Department of Primary Industries should complete a comprehensive business case for the Victorian Large Scale Solar Project and the Solar Systems Project.
-

Appendix A.

Audit Act 1994 section 16— submissions and comments

Introduction

In accordance with section 16(3) of the *Audit Act 1994* a copy of this report was provided to the Department of Premier and Cabinet, the Department of Primary Industries, the Department of Business and Innovation and Sustainability Victoria with a request for submissions or comments.

The submissions and comments provided are not subject to audit nor the evidentiary standards required to reach an audit conclusion. Responsibility for the accuracy, fairness and balance of those comments rests solely with the agency head.

Submissions and comments received

RESPONSE provided by the Secretary, Department of Premier and Cabinet



Department of Premier and Cabinet

18 MAR 2011

D11/42764

1 Treasury Place
Melbourne Victoria 3002
GPO Box 4912
Melbourne Victoria 3001
Telephone: (03) 9651 5111
Facsimile: (03) 9651 2062
DX 210753

Mr D D R Pearson
Auditor-General
Level 24
35 Collins Street
MELBOURNE VIC 3000

Dear Mr Pearson ^{18/3}

PROPOSED AUDIT REPORT – FACILITATING RENEWABLE ENERGY DEVELOPMENT

Thank you for providing me your Audit Report on *Facilitating Renewable Energy Development* (the Report). This is a complex policy area and I thank you for the work reflected in the Report.

The Department of Premier and Cabinet (DPC) accepts the recommendations in the Report within the context of the policies of the new Government.

DPC appreciates the recognition in the Report (p.18) that DPC “commissioned modelling on the introduction of a feed-in tariff for large-scale renewable and/or low-emission technologies. The assessment considered the cost to business, households and government, the impact on gross state product, and the cost of emission abatement.” As you also note (pp.ix, 17), the design of the feed-in tariff - the key policy measure to achieve the 2010 solar targets - had not been determined when the Government changed and consequently the development of a full Cost Benefit Analysis and Business Impact Assessment for the feed-in tariff had not been completed.

I thank you again for the opportunity to comment on this Report.

Yours sincerely

HELEN SILVER
Secretary



Your details will be dealt with in accordance with the *Public Records Act 1973* and the *Information Privacy Act 2000*. Should you have any queries or wish to gain access to your personal information held by this Department please contact our Privacy Officer at the above address.

RESPONSE provided by the Secretary, Department of Primary Industries



Department of Primary Industries

D D R Pearson
Auditor-General
Level 24
35 Collins Street
Melbourne VIC 3000

1 Spring Street
GPO Box 4440 Melbourne
Victoria 3001 Australia
Telephone: (03) 9658 4000
Facsimile: (03) 9658 4400
ABN 42 579 412 233
DX 210404

Dear Mr Pearson

Audit Act 1994, s16(3) – Proposed Audit Report Our Ref:
Facilitating Renewable Energy Development

Thank you for the opportunity to provide comments on your proposed audit report on *Facilitating Renewable Energy Development*.

The Department of Primary Industries (DPI) notes the three recommendations in the report, and in particular that a cost-benefit analysis should be undertaken for the solar energy targets and Large Scale Solar Feed-in Tariff announced in 2010 by the then government, that a business impact assessment and assessment of related matters be undertaken for the Large Scale Solar Feed-in Tariff, and that a comprehensive business case should be completed for the Victorian Large Scale Solar Project and the Solar Systems Project, both of which are being progressed by the relevant proponents with government funding administered by DPI consistent with the arrangements settled by the former government.

DPI will advise the government on the recommendations.

Factors that will be taken into account in the preparation of that advice will include:

- related advice on whether to continue the relevant policies and programs for renewable energy development, including the solar energy targets, Large Scale Solar Feed-in Tariff, the Solar Systems Project and the Victorian Large Scale Solar Project;
- the status of contractual commitments for the Solar Systems Project and the Victorian Large Scale Solar Project; and
- the costs and benefits of renewable energy development policies as revealed to date, and estimates of future cost and benefits using the most recent data available for current renewable energy policies of federal and state governments.

DPI notes also that it is a requirement of the funding agreement for the Solar Systems project that the project be reviewed after the construction of the 2 Megawatt (MW) demonstration plant, prior to deployment and operation of the proposed 100 MW plant.

Yours sincerely

Richard Bolt
Secretary

25 March 2011



For more information about DPI visit the website at www.dpi.vic.gov.au or call the Customer Service Centre on 136 186.

RESPONSE provided by the Chief Executive Officer, Sustainability Victoria

Level 28
Urban Workshop
50 Lonsdale Street
Melbourne Victoria
3000 Australia

T +61 3 8626 8700
F +61 3 9663 1007
sustainability.vic.gov.au
ABN 62 019 854 067



10 March 2011

Mr D. Pearson
Auditor General
Victorian Auditor Generals Office
Melbourne Vic 3000

Dear Mr Pearson,

Thank you for providing Sustainability Victoria with a copy of the Proposed Audit Report for, *Facilitating renewable energy development*. Our Chair, Mr Mike Waller has requested that I reply on behalf of Sustainability Victoria.

I was pleased that you found our facilitation of the audit constructive and that our comments on the draft report helpful.

Sustainability Victoria has no further comments to be noted or included in the final report and I can assure you that we will act to implement the recommendations that are relevant to us in relation to improving the delivery of renewable energy in Victoria.

Yours sincerely,

A handwritten signature in black ink, appearing to read "A Roper", written over a light blue horizontal line.

Anita Roper
Chief Executive Officer

CC Mike Waller, Chair, Sustainability Victoria

Auditor-General's reports

Reports tabled during 2010–11

Report title	Date tabled
Portfolio Departments: Interim Results of the 2009–10 Audits (2010–11:1)	July 2010
Taking Action on Problem Gambling (2010–11:2)	July 2010
Local Government: Interim Results of the 2009–10 Audits (2010–11:3)	August 2010
Water Entities: Interim Results of the 2009–10 Audits (2010–11:4)	August 2010
Public Hospitals: Interim Results of the 2009–10 Audits (2010–11:5)	September 2010
Business Continuity Management in Local Government (2010–11:6)	September 2010
Sustainable Farm Families Program (2010–11:7)	September 2010
Delivery of NURSE-ON-CALL (2010–11:8)	September 2010
Management of Prison Accommodation Using Public Private Partnerships (2010–11:9)	September 2010
Soil Health Management (2010–11:10)	October 2010
Sustainable Management of Victoria's Groundwater Resources (2010–11:11)	October 2010
The Department of Human Services' Role in Emergency Recovery (2010–11:12)	October 2010
Access to Ambulance Services (2010–11:13)	October 2010
Management of the Freight Network (2010–11:14)	October 2010
Security of Infrastructure Control Systems for Water and Transport (2010–11:15)	October 2010
Auditor-General's Report on the Annual Financial Report of the State of Victoria, 2009–10 (2010–11:16)	October 2010
Restricting Environmental Flows during Water Shortages (2010–11:17)	October 2010
Victorian Registration and Qualifications Authority (2010–11:18)	October 2010
Acquittal Report: Results of the 2009–10 Audits (2010–11:19)	February 2011
Effectiveness of Victims of Crime Programs (2010–11:20)	February 2011
Motorcycle and Scooter Safety Programs (2010–11:21)	February 2011

Report title	Date tabled
Construction of Police Stations and Courthouses (2010–11:22)	February 2011
Environmental Management of Marine Protected Areas (2010–11:23)	March 2011
Managing Drug and Alcohol Prevention and Treatment Services (2010–11:24)	March 2011
Local Community Transport Services: the Transport Connections program (2010–11:25)	March 2011
Effectiveness of Small Business Victoria's Support Programs (2010–11:26)	March 2011

VAGO's website at <www.audit.vic.gov.au> contains a comprehensive list of all reports issued by VAGO. The full text of the reports issued is available at the website.



Victorian Auditor-General's Office
Auditing in the Public Interest

Availability of reports

Copies of all reports issued by the Victorian Auditor-General's Office are available from:

- Information Victoria Bookshop
505 Little Collins Street
Melbourne Vic. 3000
AUSTRALIA

Phone: 1300 366 356 (local call cost)
Fax: +61 3 9603 9920
Email: <bookshop@dbi.vic.gov.au>
- Victorian Auditor-General's Office
Level 24, 35 Collins Street
Melbourne Vic. 3000
AUSTRALIA

Phone: +61 3 8601 7000
Fax: +61 3 8601 7010
Email: <comments@audit.vic.gov.au>
Website: <www.audit.vic.gov.au>