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Strategic Audit 2020-21

Implementation of environmental management systems in Victorian Government

COVER IMAGE

Aerial view of Melbourne in the morning.

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Traditional Owners

The Commissioner for Environmental Sustainability proudly acknowledges Victoria's Aboriginal community and their rich culture and pays respect to their Elders past and present.

We acknowledge Aboriginal people and Australia's first peoples as the Traditional Owners and custodians of the land and water on which we rely. We recognise and value the ongoing contribution of Aboriginal people and communities to Victorian life, and how this enriches us.

We embrace the spirit of reconciliation, working towards the equality of outcomes and ensuring an equal voice.

Commissioner's foreword

I am pleased to present the strategic audit on the implementation of environmental management systems (EMS) in mandated Victorian Government entities 2021 report in accordance with section 8(b) of the *Commissioner for Environmental Sustainability Act 2003 (CES Act)*.¹ This 2020-21 financial year strategic audit is based on information reported annually by all Victorian Government departments, Sustainability Victoria (SV) and the Environment Protection Authority (EPA) Victoria according to the mandatory reporting requirements described by Financial Reporting Directive (FRD) 24D.² The directive applies minimum criteria for government to report its office-based emissions.

This report analyses the Victorian Government's environmental performance, using the FRD 24D indicators as the framework. Following on from the last two strategic audits, this report also takes the proactive and practical step of including an 'Opportunities' section that highlights potential enhancements to improve the utility of FRD 24D.

The limitations of FRD 24D for greenhouse gas (GHG) emission reporting remains an issue that has been identified in previous strategic audit reports. FRD 24D is constrained to office-based environmental management and therefore emissions, which is a small fraction of GHG emissions contributed by Victorian Government entities. Of the GHG emissions annually reported by Victorian Government entities, less than 10% are within the scope of FRD 24D.

This year we analyse the environmental impact of the shift to remote working due to the coronavirus (COVID-19) pandemic. Two years ago, as reported in the 2018-19 Strategic Audit report and prior to the COVID-19 pandemic, only one indicator had improved by more than 50% since the baseline year. The shift to remote working during 2020-21 reduced office-based activity, air travel and use of the motor vehicle fleet, which has resulted in seven indicators having now improved by more than 50% since the baseline year. Reductions in energy usage, motor vehicle and plane travel have led to a 26% reduction in GHG emissions within the scope of FRD 24D reporting during the past year, and a 41% reduction during the past two years.³

This report highlights opportunities to improve future EMS reporting and identifies how adopting the United Nations Sustainable Development Goals (SDGs) as a reporting framework can help achieve practical, long-term benefits to environmental performance. A section of this report considers the role of the SDGs in improving our understanding of the balance between environmental, economic and social outcomes. It is pleasing to note that the Department of Environment, Land, Water and Planning (DELWP) and the Department of Justice and Community Safety (DJCS) have continued to produce annual reports that identify the links between environmental performance and the SDGs.

It is pleasing that some Victorian Government departments and agencies are achieving significant progress by implementing targeted, and often bespoke, programs. We have highlighted some noteworthy achievements throughout the report - these can be found in the 'Examples of entity progress' subsections.

There are many renewable energy projects reducing the environmental footprint of government operations that are not captured for reporting purposes by the scope of the FRD 24D, and that go beyond purchasing of Green Power for office-based operations. An example is the Victorian Government's intention to optimise the use of different kinds of recycled and reused materials across rail and road construction as part of the Recycled First Policy.⁴

1. Victorian Government 2020, Commissioner for Environmental Sustainability Act 2003, <https://content.legislation.vic.gov.au/sites/default/files/2020-12/03-15aa016%20authorised.pdf>, accessed 11 January 2022.

2. Department of Treasury and Finance (DTF) 2018, 'FRD 24D Reporting of office-based environmental data by government entities', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/2018-05/FRD%2024D%20Reporting%20of%20office-based%20environmental%20data%20by%20government%20entities.DOCX>, accessed 4 January 2022.

3. These calculations are based only on energy and transport GHG emissions, with waste GHG emissions excluded due to most entities being unable to complete waste audits during 2019-20 and 2020-21. Historically, waste disposal has accounted for less than 1% of the total GHG emissions reported within the scope of FRD 24D. Therefore, omitting waste GHG emissions will have an insignificant effect on the percentage changes reported during the past two years.

4. State Government of Victoria, 'Purposely greener infrastructure', <https://bigbuild.vic.gov.au/projects/major-road-projects-victoria/about/recycled-first> accessed 4 January 2022.

The policy provides an opportunity for bidders and contractors to showcase their commitment towards optimising the use of sustainable materials. The policy is being applied to Victoria's \$80 billion infrastructure program, which means that incremental improvements on individual road and rail construction projects can lead to significant benefits when applied at such a large scale across multiple projects. A crucial element of the Recycled First Policy is material that would previously have been classified as 'waste' is retained in the system and repurposed. This is central to the development of Victoria's circular economy that is seeking to reduce the environmental impacts of production and consumption, while enabling economic growth through more productive use of natural resources.⁵

Finally, my sincere thanks to the dedicated EMS Coordinators for their important contribution to improving the environmental performance of their organisations, and for their support in the development of this Strategic Audit report. Having champions and leaders working at all levels within an organisation with a focus on and passion for, reducing the environmental footprint of government operations is critical to achieving the collective impact we aspire to and will continue to track through this reporting program. It is an honour to serve as Victoria's Commissioner for Environmental Sustainability and to work with so many dedicated people committed to reporting and reducing the environmental footprint of the VPS.



Dr Gillian Sparkes AM

Commissioner for Environmental Sustainability, Victoria

5. Department of Environmental, Land, Water and Planning (DELWP) 2020, 'Recycling Victoria - A new economy', East Melbourne, Victoria, <https://www.vic.gov.au/sites/default/files/2020-02/Recycling%20Victoria%20A%20new%20economy.pdf> accessed 4 January 2022.



**Commissioner
for Environmental
Sustainability
Victoria**



Abbreviations

ABS	Australian Bureau of Statistics
CES	Commissioner for Environmental Sustainability
CES Act	<i>Commissioner for Environmental Sustainability Act 2003</i>
CO ₂ -e	Carbon dioxide equivalent
DELWP	Victorian Department of Environment, Land, Water and Planning
DET	Victorian Department of Education and Training
DFFH	Victorian Department of Families, Fairness and Housing
DHHS	Victorian Department of Health and Human Services
DJCS	Victorian Department of Justice and Community Safety
DJPR	Victorian Department of Jobs, Precincts and Regions
DPC	Victorian Department of Premier and Cabinet
DOH	Victorian Department of Health
DOT	Victorian Department of Transport
DPI	Victorian Department of Primary Industries
DSE	Victorian Department of Sustainability and Environment
DTF	Victorian Department of Treasury and Finance
EMS	environmental management systems
EPA	Environment Protection Authority
FRD	Financial Reporting Directive
FTE	Full Time Equivalent
GHG	Greenhouse Gas
ISO	International Organisation for Standardisation
km	Kilometre
kW	Kilowatt
L	Litre
MJ	Megajoule
NABERS	National Australian Built Environment Rating System
PV	Photovoltaic
SDGs	Sustainable Development Goals
SV	Sustainability Victoria
VPS	Victorian Public Service

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Executive summary

Comparison with last year – Performance improved during 2020-21 compared with 2019-20 for 15 of the 16 environmental performance indicators that were assessed. There were 13 indicators that improved by more than 10%, including five by more than 50%. The percentage of recycled content in copy paper purchased was the only indicator with deteriorating performance.

Given that the VPS shift to remote working occurred for approximately a quarter of the 2019-20 financial year and several entities use data for the 12-month period from 1 April to 31 March for their annual EMS reporting, the 2019-20 EMS data was less affected by the VPS shift to remote working that occurred from March 2020. This was not the case during 2020-21, with the impacts of remote working resulting in some significant reductions in energy, paper, and water usage, as well as motor vehicle and plane travel, during the 2020-21 EMS reporting period.

Comparison with base year – 12 of the 16 indicators have improved in performance since 2009-10. Two years ago, as reported in the 2018-19 Strategic Audit report and prior to the COVID-19 pandemic, only one indicator had improved by more than 50% since the baseline year (total GHG emissions associated with air travel). As part of the shift to remote working during 2020 and 2021, there is now less office-based activity, air travel and use of the motor vehicle fleet, which has resulted in seven indicators having now improved by more than 50% since the baseline year.

It is important to note the changes in the size of the VPS during the past decade. The VPS FTE was 36,863 in June 2011 and had dropped slightly to 34,794 in June 2015, before steadily climbing each year since to reach 55,726 in June 2021, which represents a 60% increase in VPS FTE during the past six years.⁶ Due to this recent growth in the size of the VPS, it is useful to look at absolute consumption values (for example, total energy usage), as well as consumption values per FTE (for example, total energy usage per FTE) to gain a more complete understanding of efficiencies and improvements in environmental performance.

As identified in previous strategic audit reports, the limitations of FRD 24D for GHG emission reporting remains an issue. FRD 24D is constrained to office-based environmental management, which is a small fraction of GHG emissions contributed by Victorian Government entities. Of the GHG emissions annually reported by Victorian Government entities, less than 10% are within the scope of FRD 24D. Figure 1 shows GHG emissions data reported by Victorian Government entities, which is split into emissions that are FRD 24D reportable, and emissions that are reported in annual reports, but are not required to be reported by FRD 24D.

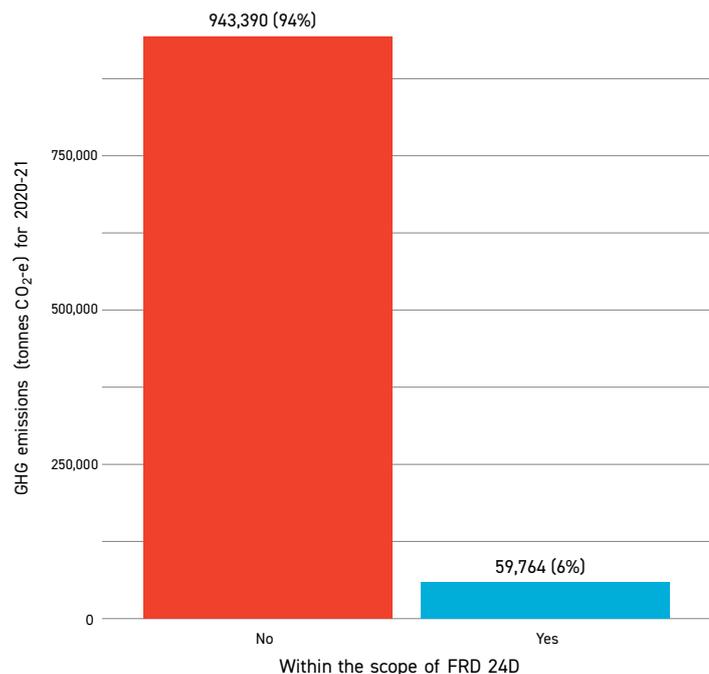


Figure 1: GHG emissions (tonnes CO₂-e) reported in entity annual reports, 2020-21⁷

6. Victorian Public Sector Commission, 'Employee numbers', <https://vpssc.vic.gov.au/data-and-research/data-facts-visuals/state-of-the-sector/employee-numbers/> accessed 12 January 2022.

7. This graph does not contain trend information. It includes emissions associated with waste disposal that are not included in other sections due to some entities being unable to complete waste audits during 2020-21. These GHG emission values incorporate a deduction of a cumulative 4,296 tonnes CO₂-e offsets that were purchased by various entities for 2020-21.

The shift to remote working has meant that some previously routine data collection and indicator performance assessments cannot be made. Like for the 2019-20 reporting year, most Victorian Government entities were again unable to complete waste audits during 2020-21.

This Strategic Audit report highlights four opportunities for the Victorian Government to improve the way it reports and assesses its environmental performance:

1. The scope of EMS reporting must be broadened beyond office-based emissions to include larger infrastructure sites such as hospitals, prisons, transport networks and water treatment plants. Any increase in scope must also be applicable to government entities beyond the departments, Environment Protection Authority (EPA) Victoria and Sustainability Victoria (SV).
2. Standardised tools and guidance materials that are developed and used by entities to report their environmental performance would be a welcome improvement. This would reduce the current widespread issues negatively impacting the accessibility, accuracy and consistency of the data reported by entities. Furthermore, as part of the next iteration of FRD 24, the Commissioner's data analysis and reporting would be made more efficient if the Commissioner could extract data in a standardised format from a single database to which each reporting entity uploaded their data.
3. Targets need to be mandated or specified to be met for the environmental performance indicators reported by entities. Whole-of-Victorian-Government (WoVG) pledges set targets for the government, but individual departments and entities have no individual targets and obligations. Setting targets to be achieved within the scope of FRD 24 would most likely increase the potency and efficacy of EMS reporting as improvements in environmental management practises are more likely to be pursued when targets need to be met.
4. Entities should research, analyse and report on the net effect of more staff working in hybrid and/or remote working settings. The systemic shift in the way we use office space and the proliferation of remote working was initiated by the COVID-19 pandemic, but the shift will be ongoing and a critical element of future EMS implementation in Victorian Government. Being able to holistically analyse and understand the impacts of a greater proportion of staff working from home would better inform future environmental policy and help the Victorian Government reduce its environmental footprint.

The prospect of an enhanced FRD 24 mechanism is exciting and would empower Victorian Government entities to:

- progress towards net-zero emissions
- provide accurate and transparent reporting to meet public expectations
- manage government exposure to climate-related risk (both physical and financial risks).

Performance at a glance

Table 1: Summary of total Victorian Government entity results for FRD 24D indicators.⁸

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Greenhouse gas emissions⁹					
Total greenhouse gas emissions associated with air travel	tonnes CO ₂ -e	378	-83%	2009-10	-97%
Total greenhouse gas emissions associated with vehicle fleet	tonnes CO ₂ -e	6,815	-48%	2009-10	-73%
Total greenhouse gas emissions associated with energy use	tonnes CO ₂ -e	52,222	-21%	2009-10	-22%
Energy use					
Units of energy used per FTE	MJ / FTE	8,544	-16%	2014-15	-42%
Total energy usage	MJ	259,300,032	-10%	2009-10	-9%
Units of energy used per unit of office area	MJ / m ²	489	-10%	2009-10	7%
Percentage of electricity purchased as Green Power	%	4	37%	2010-11	-85%
Paper use					
Units of A4 equivalent copy paper used per FTE	Reams / FTE	2	-79%	2009-10	-87%
Total units of A4 equivalent copy paper used	Reams	59,754	-78%	2009-10	-85%
Percentage of recycled content in copy paper purchased	% of 75-100% recycled content	83%	-6%	2015-16	12%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

8. Due to the COVID-19 pandemic and continued shift to remote working, many entities were unable to complete waste audits during 2020-21. Because of incomplete data, the Commissioner is unable to present meaningful waste results for 2020-21.

9. These GHG emission values incorporate a deduction of a cumulative 3,299 tonnes CO₂-e offsets that were purchased by various entities for 2020-21.

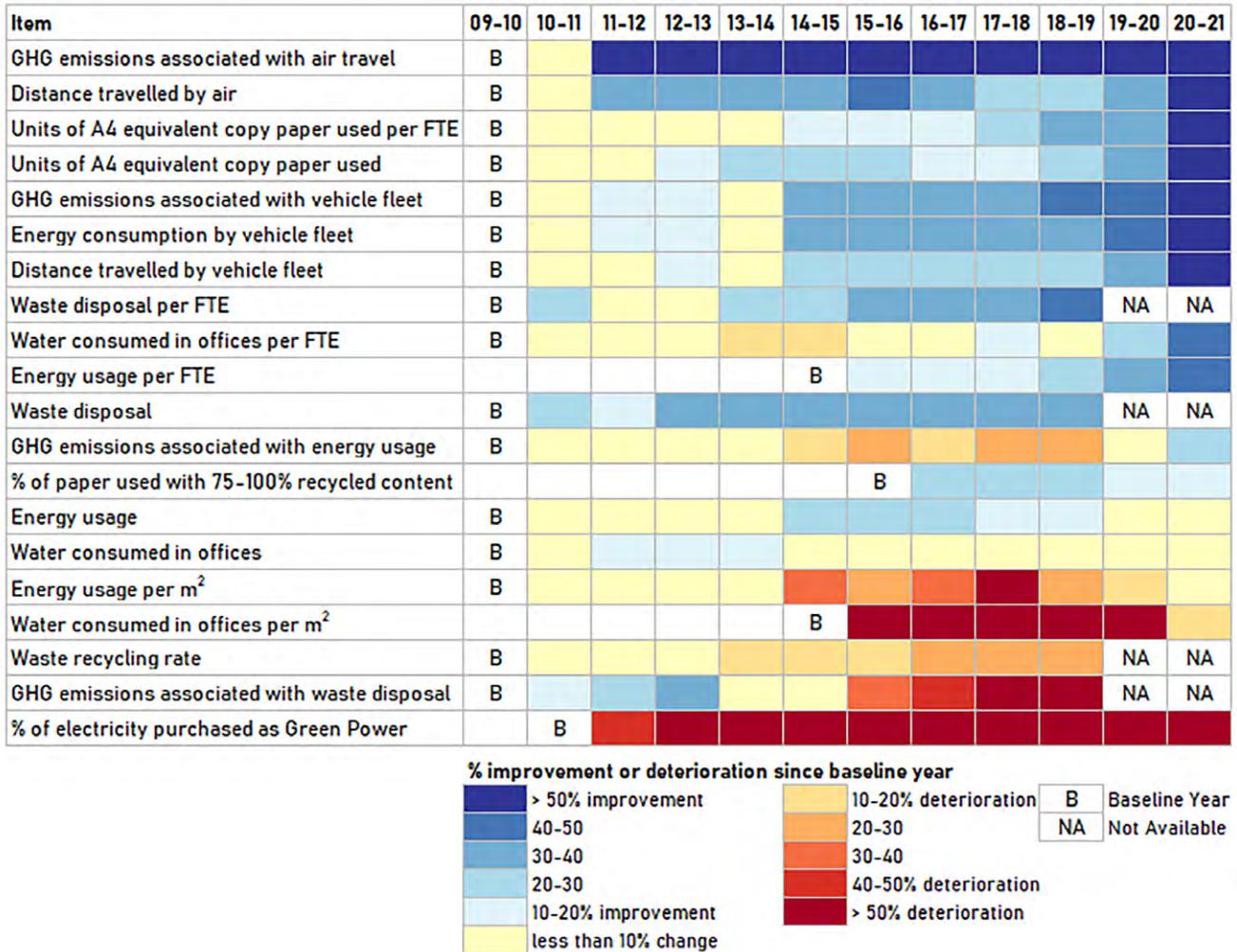
Table 1: Summary of total Victorian Government entity results for FRD 24D indicators.⁸

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Transport					
Total distance travelled by air	km	2,042,410	-90%	2009-10	-94%
Total energy consumption by vehicle fleet	MJ	103,708,719	-46%	2009-10	-71%
Total vehicle travel associated with Entity operations	km	33,679,151	-52%	2009-10	-67%
Water consumption					
Units of metered water consumed in offices per FTE	L / FTE	6,188	-22%	2009-10	-43%
Total units of metered water consumed	L	205,778,000	-3%	2009-10	1%
Units of metered water consumed in offices per unit of office area	L / m ²	355	-25%	2014-15	13%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

Figure 2: Heat map of percentage change in FRD 24D indicator values from the baseline year to 2020-21¹⁰

This figure shows environmental performance indicators (items) listed in descending order by improvement since the baseline year - that is, greatest improvement on top.



10. Note that, due to the COVID-19 pandemic and shift to remote working, many entities were unable to complete waste audits that were scheduled for 2019-20 and 2020-21. Because of incomplete data, the Commissioner is unable to present meaningful waste results for 2019-20 and 2020-21.

Method

Background

Since 2003, Victorian Government departments,¹¹ the EPA and SV – referred to collectively as ‘entities’ – have been required to implement EMS. This requirement was introduced with an office-based focus, modelled on the International Organisation for Standardisation (ISO) 14001 standard¹² and enabled by the FRD 24C. In May 2018, FRD 24D was introduced as an update and replacement for FRD 24C, with the reporting period for FRD 24D commencing 1 July 2017.¹³

Section 18 of the CES Act requires that by no later than 31 January each year, the Commissioner for Environmental Sustainability (the Commissioner) must report to the Minister for Energy, Environment and Climate Change on ‘the implementation of environmental management systems by entities and public authorities’.¹⁴ Entities are determined by the Victorian Government, as set out in section 18(2)(a) of the CES Act.

This Strategic Audit report presents environmental performance and analysis for the 2020-21 period, as provided to the Commissioner or obtained from annual reports, in general accordance with FRD 24D and consistent with section 18 of the CES Act.

The Victorian Government's FRD 24D sets minimum reporting requirements for office-based activities with environmental impacts, including:

- **energy use** – building consumption such as electricity (including Green Power), natural gas, liquefied petroleum gas, heating oil, diesel, and solid fuel
- **waste and recycling** – waste to landfill or recycling and composted waste
- **paper use** – paper used for printing and photocopying
- **water consumption** – domestic water use, rainwater, and reused water
- **transportation** – vehicle fleet energy use and air travel
- **GHG emissions** – those associated with building energy use, vehicle fleet use, air travel and waste production (any offsets purchased are also reported)
- **procurement** – a discussion as to whether, and how, procurement activities are environmentally responsible.

FRD 24D requires nominated entities to measure and report relative resource use (for example, efficiency or intensity indicators such as energy consumption per floor area or per number of FTE employees), as well as total resource use or ‘absolute’ consumption such as total energy use or total GHG emissions.

11. Applies to all entities as defined in part (a) of the definition of ‘department’ under section 3 of the *Financial Management Act 1994 (FMA)* and to the environmental entities (EPA and SV) referred to in FRD 24D as ‘entities’. Other public-sector entities are encouraged to adopt the requirements of this FRD to their annual reports.

12. ISO 14001 is the recognised international voluntary standard that sets generic requirements for preparing an EMS. An organisation must prepare an EMS that identifies and controls the environmental impact of its services and products, continually improves its environmental performance and implements a systematic approach to setting, achieving and monitoring progress towards meeting environmental objectives and targets.

13. Department of Treasury and Finance (DTF) 2018, ‘FRD 24D Reporting of office-based environmental data by government entities’, Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/2018-05/FRD%2024D%20Reporting%20of%20office-based%20environmental%20data%20by%20government%20entities.DOCX>, accessed 4 January 2022.

14. Victorian Government 2020, Commissioner for Environmental Sustainability Act 2003, <https://content.legislation.vic.gov.au/sites/default/files/2020-12/03-15aa016%20authorised.pdf>, accessed 11 January 2022.

Data integrity, reporting and analysis limitations

All figures provided to the Commissioner are verified in annual reports where available. As in previous years, entities revised some data from previous years (that is, compared with that presented in the 2019-20 Strategic Audit report) in line with the final billing cycle data and/or data corrections. This Strategic Audit report reflects the latest data consistent with the latest annual reports.

Manual data entry and data quality

Each reporting entity develops and operates bespoke tools, usually spreadsheets, to calculate the results for each FRD 24D indicator. These results are then reported in entity annual reports.

The current data process for this Strategic Audit report involves all data to be manually collated by the Commissioner. As part of the next iteration of FRD 24, the Commissioner's data analysis and reporting would be made more efficient if the Commissioner could extract data in a standardised format from a single database to which each reporting entity uploaded their data. A process modernisation such as this would improve efficiency and reduce the potential to introduce erroneous data in the reporting cycle.

During FRD 24D data collation for this Strategic Audit report, several errors were observed in entity annual reporting and the erroneous values were corrected after follow-up discussions between the Commissioner's reporting team and individual entities. Given the frequency of erroneous data that is detected in annual reporting, it is likely that further errors and inconsistencies are embedded within the raw data calculated by entities, however these cannot be detected by the Commissioner's reporting team without access to the calculations and emission factors used to produce the FRD 24D indicator values published in entity annual reports. In addition to the standardised database described above, EMS reporting would be improved if a consistent tool with guidance and support material is provided to reporting entities to minimise the frequency of unique data errors that are currently observed in the published annual reporting.

Analysing trends and machinery-of-government changes

As of 30 June 2021, there are eleven Victorian Government entities included in EMS reporting. During the past decade there has been an average of roughly one 'machinery-of-government' change per year. The net effect of these changes introduced to meet the policy objectives of successive governments, is that it is difficult to consistently track and compare EMS data over time.

One significant machinery-of-government change occurred during 2020-21, with the Department of Health and Human Services (DHHS), separating into the Department of Health (DOH) and the Department of Families, Fairness and Housing (DFFH). The current departments (that is, DOH and DFFH) operated a joint financial and corporate services system through 2020-21 so their environmental reporting for 2020-21 combined data for the two departments for the period. Each department has operated separate accounts from 1 July 2021 and will report separately in 2021-22.^{15,16}

Due to the frequency of departmental changes, the most reliable way to track EMS performance of Victorian Government entities is to look at the 'total' combined results for all entities, with additional analysis of individual entities performed selectively when the extra layer of detail adds value and is required to understand an overall change or trend.

15. Department of Health (DOH) 2021, 'Department of Health annual report 2020-21', Melbourne, Victoria, <https://www.health.vic.gov.au/sites/default/files/2021-10/department-health-annual-report-2020-21.pdf> accessed 11 January 2022.

16. Department of Families, Fairness and Housing (DFFH) 2021, 'Department of Families, Fairness and Housing annual report 2020-21', Melbourne, Victoria, <https://www.dffh.vic.gov.au/sites/default/files/documents/202110/DFFH%20annual%20report%202020-21.pdf> accessed 11 January 2022.

The change in GHG emissions from the motor vehicle fleet over time is an example, detailed below, linking data quality to machinery-of-government changes. This example highlights the limitations of comparing values to the baseline period. This is a detailed and complex example, so the following dot points have been used to break up the content in a way that provides clarity:

- Reporting improvements since 2019-20 have enabled the Department of Environment, Land, Water and Planning (DELWP) to separate data for utility vehicles from passenger vehicles, with utility vehicles considered to be beyond the scope of FRD24D reporting.¹⁷
- The impact on total GHG emissions is significant. For example, DELWP reported 7,238 t CO₂-e from total motor vehicle use during 2020-21. Of this, only 798 t CO₂-e was denoted to be from passenger vehicles and applicable for FRD 24D reporting.¹⁸
- 6,439 t CO₂-e was reported to be from utility vehicles and is no longer formally included in FRD reporting, which is significant in the context of 6,439 t CO₂-e being equivalent to more than 10% of the total GHG emissions within the scope of FRD 24D reported by all entities for 2020-21.¹⁹
- This separation of data for utility vehicles from passenger vehicles has been backdated by DELWP to the department's formation in 2014-15, however the baseline year of GHG emissions from the motor vehicle fleet for the Commissioner's strategic audit reporting is 2009-10.
- In 2009-10, the Department of Sustainability and Environment (DSE) and the Department of Primary Industries (DPI) were in operation prior to the formation of DELWP.
- The baseline GHG emission data from motor vehicles for 2009-10 includes DSE and DPI data that contains both passenger and utility vehicles, and the data for these vehicle types has not been separated.
- Further analysis of this information from 2009-10 reveals that there were nearly 25,000 t CO₂-e emissions reported, at the time, to be from motor vehicle travel and within the scope of FRD 24, with more than 6,000 t CO₂-e of these emissions attributed to DSE and DPI.
- Given the current split from utility vehicles to passenger vehicles, with only 11% of DELWP's reported GHG emissions from motor vehicles in 2020-21 being within the scope of FRD 24D, it is likely a similar proportion of the DSE and DPI motor vehicle emissions from 2009-10 are not directly comparable to the 2020-21 motor vehicle emissions data reported to be in the scope of FRD 24D.
- This means that approximately 5,000 t CO₂-e of DSE and DPI motor vehicle emissions from the 2009-10 baseline period is not applicable to the current methodology.

The context detailed in these dot points is important when considering the 73% reduction of motor vehicle fleet GHG emissions from 2009-10 to 2020-21 as reported in Table 2 of this report. The reduction of 73% is not a direct comparison based on consistent data. If the exclusion of utility vehicles from FRD 24 calculations could be backdated beyond DELWP's formation in 2014-15, then the reduction of motor vehicle fleet GHG emissions from 2009-10 to 2020-21 by Victorian Government reporting entities is highly likely to be closer to 50% rather than the reported value of 73% in this Strategic Audit report.

17. Department of Environment, Land, Water and Planning (DELWP) 2020, 'Annual Report 2020', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0025/494134/Annual-Report-2019-20-3.pdf accessed 11 January 2022.

18. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

19. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

The quality and scope of environmental performance data available to entities can improve over time. This is generally a good thing, however there are instances when more accurate data and more refined reporting methodologies negatively impact the integrity of the data time series. An example of this from 2020-21 is the increased water usage reported by DOT compared to 2019-20. While water consumption within the scope of FRD 24D declined for most entities, largely due to more employees working from home for longer periods in accordance with COVIDSafe Settings, DOT reported using 59% more water in 2020-21 compared to 2019-20. In its annual report, DOT explained this dramatic increase was due to base building water data being available for the first time - previously it was not included in the data because it was not available for shared tenancy sites. Therefore, the increased water usage in the DOT data for 2020-21 is not reflective of a real change. However, it still influences the overall value of total water consumption across all entities. Excluding DOT, the water consumption for all other entities decreased, on average by 12% from 2019-20 to 2020-21. When the DOT results are included, the average decrease in water usage across all reporting entities from 2019-20 to 2020-21 becomes only 3%.

It is important to note the changes in the size of the VPS during the past decade. The VPS FTE was 36,863 in June 2011 and had dropped slightly to 34,794 in June 2015, before steadily climbing each year since to reach 55,726 in June 2021, which represents a 60% increase in VPS FTE during the past six years.²⁰ Due to this recent growth in the size of the VPS, it is useful to look at absolute consumption values (for example, total energy usage), as well as consumption values per FTE (for example, total energy usage per FTE) to gain a more complete understanding of efficiencies and improvements in environmental performance.

Setting targets to be achieved

FRD 24D does not mandate or specify targets for individual parameters reported by entities. Setting targets would most likely increase the potency and efficacy of EMS reporting as improvements in environmental management practises are more likely to be pursued when targets need to be met. Despite not being required to meet targets as part of the reporting of office-based EMS under FRD 24D, it is encouraging to note that most entities do specify their own targets in their annual reports.

There are examples of entities intermittently setting and revising internal targets for the EMS, however the adequacy of these targets is not always clear. For example, EPA stated in its 2020-21 annual report that it 'carried over' its energy use, waste, paper use, water use, transport and GHG emissions targets from 2019-20.²¹ Going back over EPA's previous annual reports revealed that EPA's EMS targets have remained unchanged since the 2014-15 annual report, where it was stated that 'EPA's Sustainability Plan sets objectives for achievement by June 2016'.²² It is possible that all of EPA's sustainability targets have remained relevant during this six-year period from 2014-15 to 2020-21, however some targets have been comfortably achieved for a few years. EPA's 2020-21 Annual Report stated that it was currently reviewing targets for future reporting periods,²³ hopefully contemporary targets will be developed during 2021-22.

Scope of reporting

The limitations of FRD 24D for GHG emission reporting remains an issue that has been identified in previous strategic audit reports. FRD 24D is constrained to office-based environmental management, which is a small fraction of GHG emissions contributed by Victorian Government entities. Despite this, Figure 1 and Table 2 clearly demonstrate how progressive Victorian Government entities are being when it comes to reporting beyond the scope of FRD 24D. Most entities report beyond the mandated 'office-based' activity and, of the GHG emissions annually reported by Victorian Government entities, only 6% are within the scope of FRD 24D.

20. Victorian Public Sector Commission, 'Employee numbers', <https://vpssc.vic.gov.au/data-and-research/data-facts-visuals-state-of-the-sector/employee-numbers/> accessed 12 January 2022.

21. Environment Protection Authority (EPA) Victoria 2021, 'Annual Report 2020/21', Carlton, Victoria, <https://www.epa.vic.gov.au/-/media/epa/files/publications/2021---annual-report-2020-2021.pdf?1a=en&hash=A6267E78EEA57D310BD992E79478A0A7> accessed 11 January 2022.

22. Environment Protection Authority (EPA) Victoria 2015, 'Annual Report 2014-15', Carlton, Victoria.

23. Environment Protection Authority (EPA) Victoria 2021, 'Annual Report 2020/21', Carlton, Victoria, <https://www.epa.vic.gov.au/-/media/epa/files/publications/2021---annual-report-2020-2021.pdf?1a=en&hash=A6267E78EEA57D310BD992E79478A0A7> accessed 11 January 2022.

Table 2 summarises differences in the scope of entity reporting. Further information on GHG emissions can be found in the Results section.

Table 2: Extent of GHG emissions reporting for 2020-21 by entity and in relation to that mandated by FRD 24D

Entity	GHG Emissions reported within the scope of FRD 24D (tonnes CO ₂ -e)	GHG Emissions reported beyond the scope of FRD 24D (tonnes CO ₂ -e)	Amount of GHG Emissions offsets purchased (tonnes CO ₂ -e)	Total GHG Emissions reported minus offsets purchased (tonnes CO ₂ -e)	Description of items covered beyond the scope of FRD 24D
DHHS ²⁴	15,325	856,538	0	871,863 (87% of all GHG emissions reported)	Property and assets used in the delivery of the department's core functions, including residential housing, and public hospitals and health services.
DJCS	11,021	58,897	1,000	68,918 (6.9%)	Correctional facilities, youth justice facilities and warehouses.
DJPR	5,713	21,465	0	27,178 (2.7%)	Depots, laboratories and research facilities.
DOT	13,958	0	0	13,958 (1.4%)	Includes offices, customer service centres, license testing centres, depots and project offices.
DELWP	4,221	7,118	3	11,336 (1.1%)	Airbases, depots and warehouses, fire towers, research centres, mixed-use sites, utility vehicles and ultralight tankers.
DET	6,740	14	10	6,744 (0.67%)	Includes voluntary reporting on GHG emissions from water consumption.
DTF	2,143	0	1	2,142 (0.21%)	FRD 24D reportable emissions only.
DPC	1,019	5	11	1,013 (0.10%)	Includes voluntary reporting on GHG emissions to paper use.
SV	56	132	71	117 (0.012%)	Includes emissions data on all operational activities and staff commuting.
EPA	2,873	212	3,200	-115 (-0.011%)	GHG emissions beyond the scope of FRD 24D that are reported include vehicle refrigeration, building refrigeration and air conditioning, taxi use, public transport use, boat fuel, printing and publications, catering, couriers, commuting, reticulated water and paper use.

24. The Department of Health and Human Services separated into the Department of Health and the Department of Families, Fairness and Housing in 2020-21. The departments operated a joint financial and corporate services system through 2020-21 so their environmental reporting for 2020-21 combined data for the two departments for the period.

Given the overwhelming majority of GHG emissions from Victorian Government entities happens outside the scope of office-based emissions that FRD 24D currently limits reporting to, the next update to FRD 24D should mandate that reporting expands beyond the scope of office-based GHG emissions. An improved scope would capture initiatives that are in place to reduce the environmental footprint of operating public sector entities such as hospitals, prisons, schools, water corporations, treatment plants and transport networks, as well as more robust assessments of indirect emissions such as those due to employee travel and commuting. For example, Melbourne Water's activities are not currently covered in FRD 24D, however it is a statutory authority owned by the Victoria Government. In its 2020-21 annual report, Melbourne Water reported emitting 468,666 t CO₂-e across its operations.²⁵ Of these emissions, 395,507 t CO₂-e was attributed to sewage treatment and management, while 64,027 t CO₂-e was reported to be from water treatment and supply. To put this in context, the total GHG emissions reported by Victorian Government entities in accordance with FRD 24D during 2020-21 was less than 70,000 t CO₂-e.

Potentially, a clear and simple threshold assessment could be developed as part of an updated FRD 24D. The threshold assessment could be based on the size and type of operational activities, with only those entities exceeding the threshold required to complete a detailed EMS report. This tiered approach would scale reporting requirements and balance information needs with the compliance burden on entities.

25. Melbourne Water Corporation 2021, 'Melbourne Water Annual Report 2020/21', Melbourne, Victoria, <https://www.melbournewater.com.au/media/17991/download> accessed 12 January 2022.

Results

Performance summary 2020-21

FRD 24D mandates that Victorian Government entities must annually report on their environmental footprint – 20 of the indicators required to be reported are suitable for analysis at the WoVG level. Due to the impact of the COVID-19 pandemic work from home directives, many entities were unable to complete waste audits during 2020-21. Because of this, WoVG data for the four waste and recycling indicators is not available, and as a result, only 16 indicators have been assessed at a WoVG level in this year's Strategic Audit report.

The environmental performance of Victorian Government entities improved for 15 of the 16 indicators compared with 2019-20, while 12 of the indicators have improved since baseline data was collected for the 2009-10 financial year. Significant improvements and deteriorations are highlighted below.

Of the 16 indicators, five are 'intensity' measures that assess consumption or usage per FTE or area of office space. The three intensity indicators associated with FTE all show at least a 40% more efficient environmental performance across Victorian Government entities since the baseline period, while the two intensity indicators associated with office space reveal a deterioration. This highlights the importance of understanding which intensity indicator is most appropriate for reporting purposes, with the results reflecting that the density of Victorian Government entity employees per unit of office area has increased over the past decade, and it is important to monitor both total resource usage and the efficiency of use per FTE for critical parameters. For example, the efficiency of paper use (that is, paper usage per FTE) has significantly outpaced the growth of staff numbers in Victorian Government entities, which has resulted in a sizeable reduction in total paper usage, even though staff numbers have increased.

Significant changes (that is, changes by more than 10%) in Victorian Government performance for EMS indicators are summarised below. The themes are provided in the parentheses, with more details provided in the thematic sub-sections of the **Results** section of this Strategic Audit report.

Significant **improvements during 2020-21** include:

- (Greenhouse gas emissions) GHG emissions reduced by 83, 48 and 21% for air travel, motor vehicle travel and office-based energy usage respectively.
- (Paper use) Overall paper usage and usage per FTE decreased by nearly 80% during 2020-21.
- (Water use) Water use per FTE reduced by 22% during 2020-21.

These reductions were primarily due to work from home directives and travel restrictions associated with the COVID-19 pandemic. Given that the VPS shift to remote working occurred for approximately a quarter of the 2019-20 financial year and several entities use data for the 12-month period from 1 April to 31 March for their annual EMS reporting, the 2019-20 EMS data was largely unaffected by the VPS shift to remote working from March 2020. This was not the case during 2020-21, with the impacts of remote working resulting in some significant reductions in energy, paper and water usage, as well as motor vehicle and plane travel, during the 2020-21 EMS reporting period.

There were no significant **deteriorations during 2020-21**.

Significant **long-term improvements** include:

- (Transport) Air travel GHG emissions have decreased by 97% due to lower emitting aircraft and government entities increasingly purchasing offsets for air travel. Most recently, the reduction during 2020-21 was strongly influenced by travel restrictions related to the COVID-19 pandemic. The restricted movement was also a big contributing factor in the sharp reductions for energy consumption and GHG emissions associated with motor vehicle travel that have decreased by 71% and 73% respectively.
- (Paper use) Total paper use and paper use per FTE are down 85% and 87% respectively since 2009-10, while there has been a 12% increase in the percentage of paper used that has a large percentage (75 to 100%) of recycled content since 2015-16 when that indicator was first reported.
- (Energy use) Energy use per FTE is down 42% since 2009-10 and GHG emissions associated with energy use have reduced by 22%.
- (Water use) Water use per FTE is down 43% since 2009-10.

Significant **long-term deteriorations** include:

- (Green Power) Green Power as a proportion of electricity purchased has fallen from 27% in 2010-11 to 4% in 2020-21. Green Power represents electricity consumed from renewable energy sources.²⁶
- (Water use) The overall water consumption for 2020-21 was very similar to the results for 2009-10 (within 1%), indicating little overall change throughout the past 12 years. However, the intensity indicator associated with office space shows a 13% deterioration, highlighting the importance of understanding which intensity indicators are most appropriate for reporting purposes. These results per unit of office area are likely to be indicative of reducing office area sizes and/or an increasing density of employees per unit of office area; hence, an intensity measure per FTE rather than per square metre of office area may provide a clearer picture of resource efficiency.

To enhance the practicality of this Strategic Audit report, opportunities to better report and reduce the environmental footprint of Victorian Government entities are consistently highlighted throughout the narrative. These concepts are discussed most prominently in the **Data integrity, reporting and analysis limitations**, **Sustainable Development Goals** and **Opportunities** sections of this Strategic Audit report.

26. The decreased proportion of electricity purchased as Green Power should be viewed in the context of policy shifting to funding renewable energy projects, including those that power activities broader than internal government operations. These activities and projects are not captured by the FRD 24D scope and include providing solar power systems for schools, completely offsetting Melbourne's tram network by solar power, installing solar power systems at Water Treatment Plants and investing in a Regional Health Solar Program to install solar panels on hospital rooftops.

Energy use

Table 3: Summary of total Victorian Government entity results for energy use FRD 24D indicators

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Units of energy used per FTE	MJ / FTE	8,544	-16%	2014-15	-42%
Total greenhouse gas emissions associated with energy use	tonnes CO ₂ -e	52,222 ²⁷	-21%	2009-10	-22%
Total energy usage	MJ	259,300,032	-10%	2009-10	-9%
Units of energy used per unit of office area	MJ / m ²	489	-10%	2009-10	7%
Percentage of electricity purchased as Green Power	%	4	37%	2010-11	-85%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

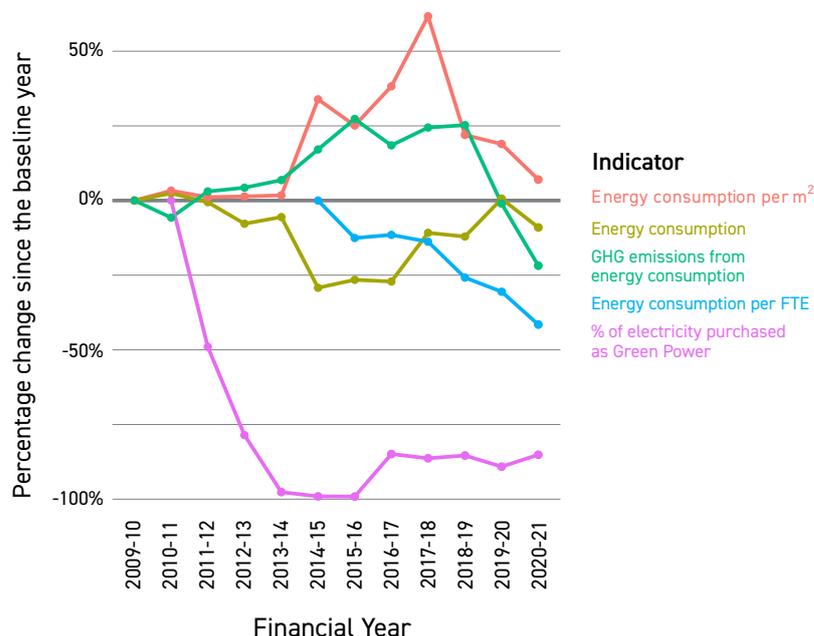


Figure 3: Percentage change in FRD 24D energy use indicator values from the baseline year (2009-10) to 2020-21

Energy consumption during 2020-21 was down 10% from the previous year, which is most likely due to an increase of staff working from home due to the COVID-19 pandemic. This 10% reduction during 2020-21 has led to a 9% reduction from the baseline year of 2009-10. Interestingly, the amount of GHG emissions associated with energy use has dropped at a sharper rate than the decline in energy consumption, which indicates a reducing GHG emission intensity from energy use (that is, there are fewer GHG emissions per unit of energy consumed).

27. This GHG emission value incorporates a deduction of a cumulative 2,548 tonnes CO₂-e offsets that were purchased by EPA and SV for 2020-21.

The improving GHG emission intensities from office-based energy usage reflects the results of the departments that used the most energy. For example, the five departments responsible for the most energy usage (that is, DHHS, DOT, DJCS, DET and DELWP) all recorded GHG emission intensity improvements of between 5 and 20% from 2019-20 to 2020-21 for office-based energy use.

During recent years, office-based energy efficiency initiatives by government entities have generally been counterbalancing increasing VPS FTEs, which is demonstrated by the steady reduction in energy consumption per FTE since that metric was first tracked in 2014-15. This is shown by the blue line (energy consumption per FTE) on the graph in Figure 3 generally trending down (improving) during recent years compared to the gold line (energy consumption) that has mostly been increasing (deteriorating).

The purchasing of Green Power by Victorian Government departments remains low following a sharp reduction in the percentage of electricity purchased as Green Power after the Victorian Government's decision to discontinue mandatory Green Power targets from 1 July 2011. Green Power represents electricity consumed from renewable energy sources. Currently, SV purchases 100% of its electricity as Green Power, with DELWP also purchasing a significant proportion of its electricity (32%) as Green Power. EPA purchases a small proportion of Green Power (3%), while no other entities purchase Green Power. None of the four biggest electricity-using entities²⁸ purchase Green Power – these entities are DJPR, DHHS, DOT and DJCS, and they account for a combined 73% of the total electricity usage reported for 2020-21 by Victorian Government departments, EPA and SV.²⁹

The Green Power indicator is likely to be superseded by future reporting that tracks a WoVG pledge for operations – including schools, hospitals and metropolitan trains and trams – to be powered by 100% renewable electricity by 2025. This pledge was made in the Climate Change Strategy, released in May 2021.³⁰

Examples of entity progress

DELWP has stated its commitment to achieve net zero electricity emissions from 2021-22 onwards in advance of the broader Victorian Government commitment to source 100% renewable electricity for its operations by 2025. DELWP has made progress by installing 1,198 kW of photovoltaic (PV) solar panels at 25 of its sites, which have been estimated to reduce annual greenhouse gas emissions by 1,243 tonnes CO₂-e. An additional 550 kW of PV solar panels are scheduled to be installed before 2025, while DELWP will continue purchasing Green Power and offsets to achieve zero emissions for its electricity consumption.³¹

DJCS has a target to reduce its total electricity consumption by 5% and ensure that at least 10% of the department's total electricity is renewably sourced by 2022. The department's recent energy reduction projects include producing 4,213,254 MJ of power from solar panels during 2020-21, saving over 1,200 tonnes of CO₂.³²

In 2020-21, DHHS, DOH and DFFH continued installing solar panels funded through the Regional Health Solar Program. Of the 8.7 megawatt-peak supported through the program, 7.4 megawatt-peak has been installed and is operational. Data on electricity generation is being captured by hospital solar arrays. In 2020-21 solar arrays on Victorian public hospitals generated 9.8 gigawatt-hours of electricity, reducing carbon emissions by some 11,000 tonnes CO₂-e.³³

Office lighting has been another focus area, with DJPR and DOT highlighting in their annual reports that light-emitting diode (LED) upgrades have been completed in their office buildings.^{34,35}

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28. Note that some entities do not separate electricity usage into usage that is within or beyond the scope of FRD 24D. Therefore, the four biggest electricity-using entities are based on total electricity reported in entity annual reports, regardless of whether some of that electricity usage is beyond the scope of FRD 24D.
29. The decreased proportion of electricity purchased as Green Power should be viewed in the context of policy shifting to funding renewable energy projects, including those that power activities broader than internal government operations. These activities and projects are not captured by the FRD 24D scope and include providing solar power systems for schools, completely offsetting Melbourne's tram network by solar power, installing solar power systems at Water Treatment Plants and investing in a Regional Health Solar Program to install solar panels on hospital rooftops.
30. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Victoria's Climate Change Strategy', East Melbourne, Victoria, https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0025/522169/Victorian-Climate-Change-Strategy-Accessible.pdf accessed 12 January 2022.
31. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.
32. Department of Justice and Community Safety (DJCS) 2021, 'Annual Report 20-21', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.
33. Department of Health (DOH) 2021, 'Department of Health annual report 2020-21', Melbourne, Victoria, <https://www.health.vic.gov.au/sites/default/files/2021-10/department-health-annual-report-2020-21.pdf> accessed 11 January 2022.
34. Department of Transport (DOT) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://transport.vic.gov.au/-/media/tyf-documents/department-of-transport-annual-report-2020-21.pdf?la=en&hash=81F8BFCFEC663D2C24D7FAD27BBA56C3B> accessed 12 January 2022.
35. Department of Jobs, Precincts and Regions (DJPR) 2021, 'Annual Report 2020-2021', Melbourne, Victoria, https://djpr.vic.gov.au/_data/assets/pdf_file/0010/2038069/DJPR-Annual-Report-2020-21.pdf accessed 12 January 2022.

Paper use

Table 4: Summary of total Victorian Government entity results for paper use FRD 24D indicators

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Units of A4 equivalent copy paper used per FTE	Reams / FTE	2	-79%	2009-10	-87%
Total units of A4 equivalent copy paper used	Reams	59,754	-78%	2009-10	-85%
Percentage of recycled content in copy paper purchased with 75-100% recycled content	%	83%	-6%	2015-16	12%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

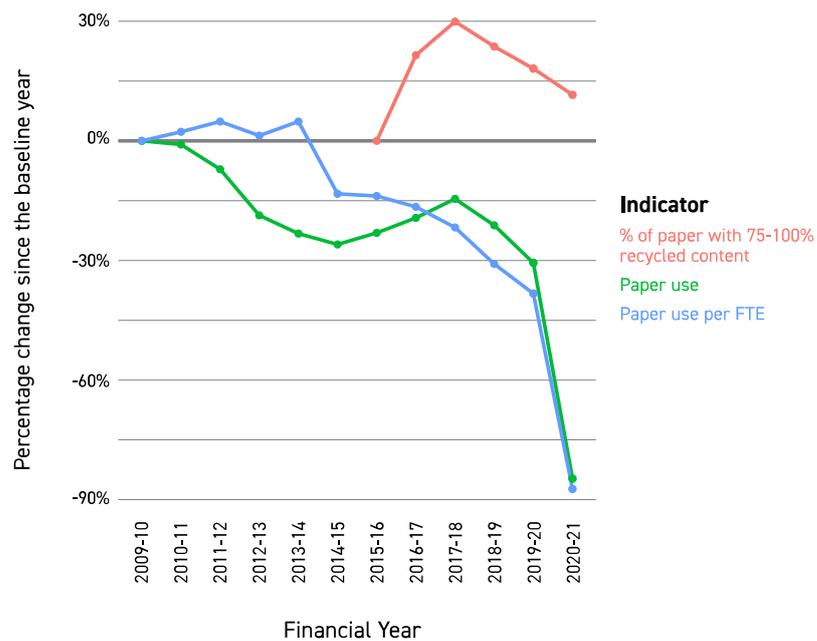


Figure 4: Percentage change in FRD 24D paper use indicator values from the baseline year (2009-10) to 2020-21

Paper usage by government entities continues to be a positive story. Paper use has reduced by 85% since the 2009-10 baseline year, with paper use per FTE reducing by 87% over the same period. Most of the reduction in paper use occurred during 2020-21, driven by significantly fewer VPS staff working in the office during 2020-21 as part of the work from home directives specified by Victoria's COVIDSafe Settings.

Furthering the benefits associated with a significant reduction in paper use, there has been a 12% increase in the percentage of paper used that has a large percentage (75 to 100%) of recycled content since the baseline year, however it is worth noting that a minor deterioration was recorded for the third year in a row for this measure.

In addition to the large proportion of the FTE working remotely due to the COVID-19 pandemic during 2020 and 2021, the reduction in paper usage since the baseline period is likely also due to other factors. These include the proliferation of digital technologies replacing legacy paper-based systems, as well as most entities now using some form of 'Follow-Me Printing' system that only allows documents to be printed when users are physically at the printer.

Examples of entity progress

The Department of Treasury and Finance (DTF) reported that its paper use in 2020-21 decreased significantly as the use of electronic reviews, other IT solutions and digital signatures increased, largely influenced by work from home directives as specified by Victoria's COVIDSafe Settings. Furthermore, DTF has been increasing the number of publications available for electronic review, which has been reducing the need to print hard copy drafts.³⁶ DPC also report developing more digital solutions to reduce paper-based activities.³⁷

EPA's reporting listed some initiatives that are in place to reduce paper consumption. 'Follow-Me Printing' requires EPA staff to confirm print jobs with their identification cards prior to the execution of the print job, while all staff have been provided with Microsoft Surface tablets to encourage greater digital, rather than paper-based, consumption of information. Additionally, various functional areas of the business had already started a move to paperless processing prior to the COVID-19 pandemic.³⁸

36. Department of Treasury and Finance (DTF) 2021, '2020-21 Annual Report', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/document/2020-21%20DTF%20Annual%20Report.pdf> accessed 12 January 2022.

37. Department of Premier and Cabinet (DPC) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://content.vic.gov.au/sites/default/files/2021-10/DPC%20Annual%20Report%202020-21.pdf> accessed 12 January 2022.

38. Environment Protection Authority (EPA) Victoria 2021, 'Annual Report 2020/21', Carlton, Victoria, <https://www.epa.vic.gov.au/-/media/epa/files/publications/2027---annual-report-2020-2021.pdf?la=en&hash=A6267E78EEA57D310BD992E79478A0A7> accessed 11 January 2022.

Transport

Table 5: Summary of total Victorian Government entity results for transport FRD 24D indicators

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Total greenhouse gas emissions associated with air travel	tonnes CO ₂ -e	378 ³⁹	-83%	2009-10	-97%
Total distance travelled by air	km	2,042,410	-90%	2009-10	-94%
Total greenhouse gas emissions associated with vehicle fleet	tonnes CO ₂ -e	6,815 ⁴⁰	-48%	2009-10	-73%
Total energy consumption by vehicle fleet	MJ	103,708,719	-46%	2009-10	-71%
Total vehicle travel associated with entity operations	km	33,679,151	-52%	2009-10	-67%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

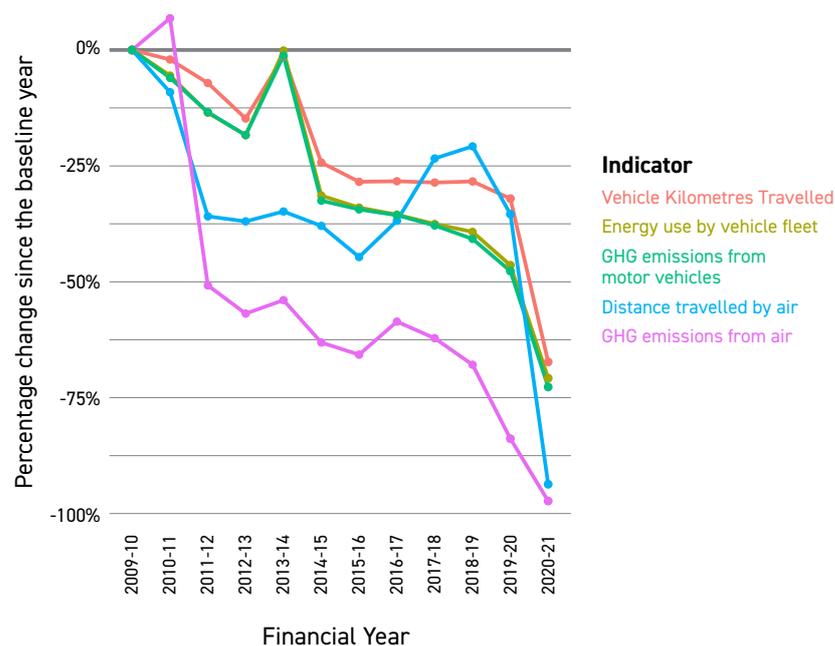


Figure 5: Percentage change in FRD 24D transport indicator values from the baseline year (2009-10) to 2020-21

The 2020-21 results for all five FRD 24D transportation indicators compare extremely favourably - improvements by between 67 and 97% - against results from the 2009-10 baseline year. Significant improvements were achieved between 2010-11 and 2012-13, with mostly minor changes occurring from 2012-13 – 2018-19, apart from an increase in air travel observed between 2015-16 and 2018-19.

39. This GHG emission value incorporates a deduction of a cumulative 48 tonnes CO₂-e offsets that were purchased by DELWP, DET, DJCS, DPC, DTF, EPA and SV for 2020-21.

40. This GHG emission value incorporates a deduction of a cumulative 702 tonnes CO₂-e offsets that were purchased by DJCS, EPA and SV for 2020-21.

However, the impact of working from home and travel restrictions associated with Victoria's COVIDSafe Settings have resulted in huge decreases in motor vehicle use and air travel during the past two years, particularly 2020-21. All transport indicators reduced by at least 46% during 2020-21, with the distance travelled by air decreasing by 90%.

Given the uptake in video conferencing and remote working during 2020 and 2021, it will be interesting to monitor the longer-term impacts, and whether air and motor vehicle travel by VPS staff will be permanently reduced due to the uptake of online collaborations.

Entities also report on an 'intensity' indicator that measures GHG emissions from the vehicle fleet per 1,000 km. As stated in previous strategic audit reports, this information is useful as some entities are very proactive in the way they set targets. DJCS has continued with its internal emissions intensity target of 130 grams of CO₂ per km and a sliding scale surcharge to reduce motor vehicle fleet emissions. This target was achieved during 2019-20 and was partly attributed to DJCS' Supplementary Motor Vehicle Policy that mandates default low-emission vehicles. The implementation of this policy has led to DJCS reducing its transport intensity by 25% during 2018-19, a further 17% during 2019-20 and another 13% during 2020-21.^{41,42,43}

Figure 6 shows each entity's GHG emissions from the vehicle fleet per 1,000 km travelled. DJCS leads the way with the fewest GHG emissions per distance travelled.

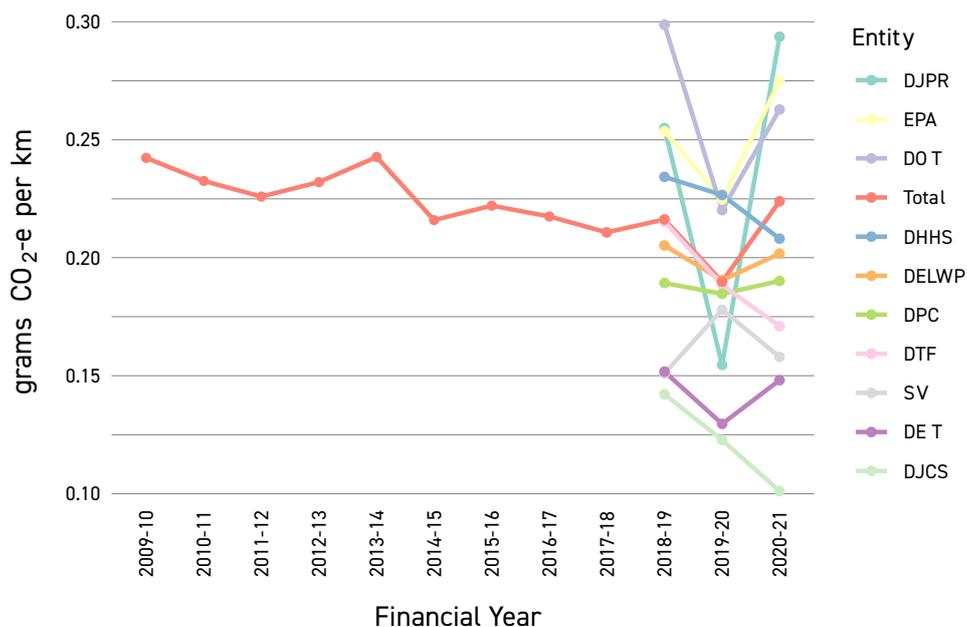


Figure 6: GHG emissions from the motor vehicle fleet per kilometre travelled⁴⁴

Victorian Government entities are also required to report on the percentage of employees using sustainable transport (for example, public transport, cycling, walking and car-pooling) to get to and from work, by locality type. Historically, the way entities had been reporting sustainable transport data was quite varied, but greater consistency was being achieved by 2018-19. However, due to the COVID-19 pandemic and the shift to remote working in 2020 and 2021, approaches differ again.

41. Department of Justice and Community Safety (DJCS) 2019, 'Annual Report 2018-19', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-06/DJCS_Annual_Report_2018%2019_2.pdf accessed 12 January 2022.
 42. Department of Justice and Community Safety (DJCS) 2020, '19-20 Annual Report', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-06/DJCS%20Annual%20Report%2019%2020_3.pdf accessed 12 January 2022.
 43. Department of Justice and Community Safety (DJCS) 2021, '20-21 Annual Report', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.
 44. Note that, given the frequency of machinery of government changes prior to 2018-19, individual entity data is not provided prior to 2018-19 and a 'total' value encompassing all reporting entities has been provided. Also note that the DHHS value for 2020-21 encompasses data for DFFH and DOH.

This means, like the waste section, the Commissioner is unable to provide meaningful overall results. Arguably, the most noteworthy aspect of sustainable transport reporting by entities continues to be SV going beyond the scope of FRD 24D and estimating its indirect GHG emissions associated with staff commuting – the results show that staff commuting is one of the largest contributors to SV's emissions inventory, accounting for 12 tonnes CO₂-e during 2020-21.⁴⁵

Examples of entity progress

Most entities reported offsetting air travel GHG emissions through the state purchasing contract.⁴⁶ DJCS, EPA and SV also stated in their 2020-21 annual reports that they offset their motor vehicle GHG emissions.

DTF encourages staff to use video conferencing rather than air travel, where appropriate. DTF reported a decline in vehicle use during 2020-21 because of the effects of the COVID-19 pandemic. Notably, the department also reported the results of a survey for the period of March to May 2021 that discovered 90% of staff residing in metropolitan Melbourne planned to use sustainable transport for travel to the workplace after the travel restrictions relating to the COVID-19 pandemic were lifted.⁴⁷

As discussed above, DJCS continues to implement an average internal emissions efficiency target of 130 grams of CO₂ per km. The department has stated they will explore options to progress to a zero-emissions transport future by seeking to increase the proportion of electric vehicles in its leased fleet to at least 8% by 2022 and install at least 20 electric vehicle charging points. Currently, 55% of the fleet are hybrid vehicles, with 3% being plug-in hybrid electric vehicles.⁴⁸

45. Sustainability Victoria (SV) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://assets.sustainability.vic.gov.au/susvic/Sustainability-Victoria-annual-report-2020-2021.pdf> accessed 12 January 2022.

46. The list of entities that reported offsetting air travel GHG emissions in 2020-21 is: DELWP, DET, DJCS, DPC, DTF, EPA and SV.

47. Department of Treasury and Finance (DTF) 2021, '2020-21 Annual Report', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/document/2020-21%20DTF%20Annual%20Report.pdf> accessed 12 January 2022.

48. Department of Justice and Community Safety (DJCS) 2021, '20-21 Annual Report', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.

Waste and recycling

Due to the COVID-19 pandemic and many staff working from home, in line with COVIDSafe Settings, several entities were unable to complete waste audits during 2020-21. Because of incomplete data, the Commissioner is unable to present meaningful waste results for 2020-21.

For the entities that were unable to complete waste audits, a range of different methods were used in their 2020-21 annual reports:

- DHHS, DJCS and DOT chose not to report the data as it was not able to be collected or was not representative of the normal operating environment.^{49,50,51}
- DJPR's waste audit was delayed until July 2021. The data collected was not representative of the normal operating environment but was included in their reporting to reflect the waste streams for that point in time.⁵²
- DET extrapolated waste data that it had managed to collect that was representative for 75% of its FTEs.⁵³
- DPC was unable to conduct waste audits at its sites and it reported its 2018-19 waste data for 2019-20 and 2020-21.⁵⁴
- DTF also used its 2018-19 data for 2019-20, however it multiplied the results from 2018-19 to 2019-20 by the proportional change in its FTE from 2018-19 to 2019-20. As stated in its annual report for 2020-21, DTF stated 'Due to the impact of COVID-19 work from home directives, a waste audit for 2020-21 was not undertaken. DTF considers applying an adjustment based on FTE using the 2018-19 waste audit (the method undertaken for 2019-20) would not be an accurate reflection of DTF's waste and recycling over the 2020-21 year, as the vast majority of staff did not attend the office for a significant portion of the 2020-21 year'.⁵⁵
- DELWP, EPA and SV were the only entities to complete waste audits and report their waste results in full, and they all recorded positive performances.^{56,57,58} Across each of those three entities, the total amount of waste disposed decreased as did the total disposed per FTE. The waste recycling rate increased at DELWP and SV, while it decreased slightly at EPA. SV noted that its waste figures were from measurements taken in 2021 during a 'normal' work week, with a 'new normal' week for 2020-21 defined as less than 30% workforce at the office, meaning a significant reduction in waste compared to 2019-20.

49. Department of Health (DOH) 2021, 'Department of Health annual report 2020-21', Melbourne, Victoria, <https://www.health.vic.gov.au/sites/default/files/2021-10/departement-health-annual-report-2020-21.pdf> accessed 11 January 2022.

50. Department of Justice and Community Safety (DJCS) 2021, 'Annual Report 20-21', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.

51. Department of Transport (DOT) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://transport.vic.gov.au/-/media/tfv-documents/departement-of-transport-annual-report-2020-21.pdf?la=en&hash=81F8BCFEC663D2C24D7FAD27BBA56C3B> accessed 12 January 2022.

52. Department of Jobs, Precincts and Regions (DJPR) 2021, 'Annual Report 2020-2021', Melbourne, Victoria, https://djpr.vic.gov.au/_data/assets/pdf_file/0010/2038069/DJPR-Annual-Report-2020-21.pdf accessed 12 January 2022.

53. Department of Education and Training (DET) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://www.education.vic.gov.au/Documents/about/departement/Department%20of%20Education%20and%20Training%20Annual%20Report%202020-21.pdf> accessed 12 January 2022.

54. Department of Premier and Cabinet (DPC) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://content.vic.gov.au/sites/default/files/2021-10/DPC%20Annual%20Report%202020-21.pdf> accessed 12 January 2022.

55. Department of Treasury and Finance (DTF) 2021, '2020-21 Annual Report', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/document/2020-21%20DTF%20Annual%20Report.pdf> accessed 12 January 2022.

56. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

57. Environment Protection Authority (EPA) Victoria 2021, 'Annual Report 2020/21', Carlton, Victoria, <https://www.epa.vic.gov.au/-/media/epa/files/publications/2021---annual-report-2020-2021.pdf?la=en&hash=A6267E78EEA57D310BD992E79478A0A7> accessed 11 January 2022.

58. Sustainability Victoria (SV) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://assets.sustainability.vic.gov.au/susvic/Sustainability-Victoria-annual-report-2020-2021.pdf> accessed 12 January 2022.

Water consumption

Table 6: Summary of total Victorian Government entity results for water consumption FRD 24D indicators

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Units of metered water consumed in offices per FTE	L / FTE	6,188	-22%	2009-10	-43%
Total units of metered water consumed	L	205,778,000	-3%	2009-10	1%
Units of metered water consumed in offices per unit of office area	L / m ²	355	-25%	2014-15	13%

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

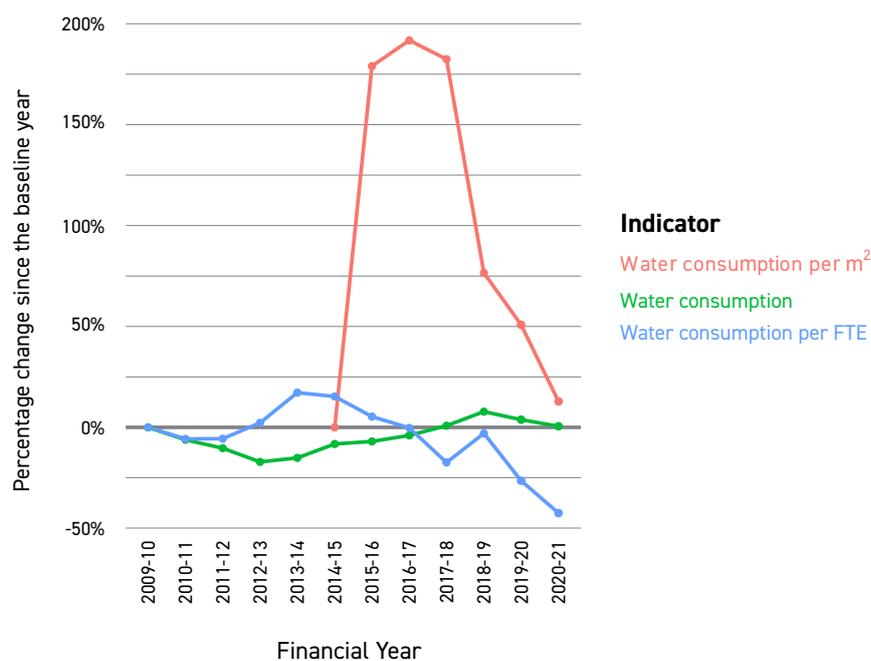


Figure 7: Percentage change in FRD 24D water consumption indicator values from the baseline year (2009-10) to 2020-21

From 2013-14 to 2018-19 improvements in water efficiency, in terms of water consumption per FTE, were observed. However, increases in total Victorian Government entity FTE during that period had been outpacing the efficiency improvements and total water consumption from entities had been steadily increasing. The impacts of the COVID-19 pandemic and an increase in staff working from home during the final quarter of 2019-20 resulted in a slight drop in water consumption for the first year since 2012-13. With work from home directives associated with the COVID-19 pandemic being applied for much of 2020-21, there was another slight decrease in water consumption during 2020-21.

As discussed in the Analysing trends and machinery-of-government changes section, the 3% decline in water consumption during 2020-21 was artificially impacted by changed reporting methodology by DOT. While water consumption within the scope of FRD 24D declined for most entities, largely due to more employees working from home for longer periods due to COVID-19 work from home directives, DOT reported using 59% more water in 2020-21 compared to 2019-20. In its annual report, DOT explained this dramatic increase was due to base building water data being available for the first time - previously it was not included in the data because it was not available for shared tenancy sites. Therefore, the increased water usage in the DOT data for 2020-21 compared to 2019-20 does not reflect a real change. However, it still influences the overall value of total water consumption across all entities. Excluding DOT, the water consumption for all other entities decreased, on average, by 12% from 2019-20 to 2020-21. When the DOT results are included, the average decrease in water use across all reporting entities from 2019-20 to 2020-21 becomes only 3%.

Water consumption per square metre of office area dramatically increased from 2014-15 to 2015-16. Since then, there has been significant year-on-year reductions. This may reflect inconsistencies in how office area has been recorded during these years, rather than an actual change in water consumption per square metre.

Examples of entity progress

DEWLP reported that, in association with work from home directives specified in Victoria's COVIDSafe Settings, total water consumption has decreased by 23% since 2019-20. This was consistent with most other reporting entities, except for DOT as outlined above. All of DELWPs new buildings, significant rebuilds and office fit-outs incorporate water efficiency measures to help achieve a 6 Green Star standard. These water efficiency measures include water efficient fixtures, water efficient appliances, water storage tanks and rainwater systems.⁵⁹

DJCS has a target to reduce total non-office potable water consumption by 5% from 2018-19 levels by 2022. The largest tenancy, 121 Exhibition Street, Melbourne, has a National Australian Built Environment Rating System (NABERS) water rating of 3.5 out of five stars. The department's water reduction projects include utilising stormwater ponds, rainwater tanks, water timers on taps, sprinklers, and water outlets. DJCS also states that the water efficiencies for new builds are incorporated into infrastructure plans.⁶⁰

DET stated in its 2020-21 Annual Report that new office fit-outs and upgrades, including water saving systems, have been made at some of its offices.⁶¹

59. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

60. Department of Justice and Community Safety (DJCS) 2021, 'Annual Report 20-21', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.

61. Department of Education and Training (DET) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://www.education.vic.gov.au/Documents/about/department/Department%20of%20Education%20and%20Training%20Annual%20Report%202020-21.pdf> accessed 12 January 2022.

Greenhouse gas emissions

Table 7: Summary of total Victorian Government entity results for GHG emission FRD 24D indicators⁶²

Indicator	Unit	Value in 2020-21	% change from 2019-20 to 2020-21	Baseline year	% change from baseline year to 2020-21
Total greenhouse gas emissions associated with air travel	tonnes CO ₂ -e	378	-83%	2009-10	-97%
Total greenhouse gas emissions associated with vehicle fleet	tonnes CO ₂ -e	6,815	-48%	2009-10	-73%
Total greenhouse gas emissions (excluding emissions associated with waste disposal)	tonnes CO ₂ -e	59,415	-27%	2009-10	-44%
Total greenhouse gas emissions associated with energy use	tonnes CO ₂ -e	52,222	-21%	2009-10	-22%
Total greenhouse gas emissions associated with waste disposal	tonnes CO ₂ -e	NA	NA	NA	NA

Improving (Improvement by more than 10%) | Stable (Change by 10% or less) | Deteriorating (Deterioration by more than 10%)

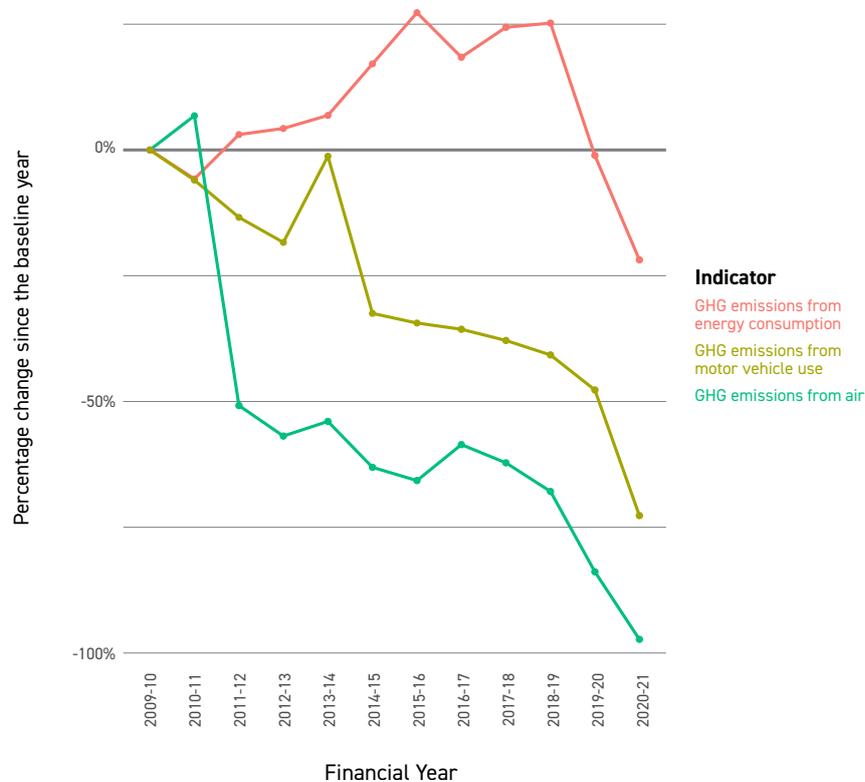


Figure 8: Percentage change in FRD 24D GHG emission indicator values from the baseline year (2009-10) to 2020-21

62. These GHG emission values incorporate a deduction of a cumulative 3,299 tonnes CO₂-e offsets that were purchased by various entities for 2020-21.

Analysis of GHG emissions is provided in previous environmental sector-specific sections (see Energy use and Transport). There were significantly fewer GHG emissions during 2020-21 compared to 2019-20 and the baseline period of 2009-10. Across FRD reportable GHG emissions from energy and transport, there has been a 44% reduction since the baseline of 2009-10. Figure 9, below, shows how FRD 24D reportable GHG emissions are tracking towards net-zero. The past two years have been impacted by the COVID-19 pandemic and a major shift to working from home, which has driven the significant decreases in GHG emissions from office-based energy use and the motor vehicle fleet. Figure 8 also clearly shows that office-based energy use is the major source of GHG emissions within the scope of FRD 24D.

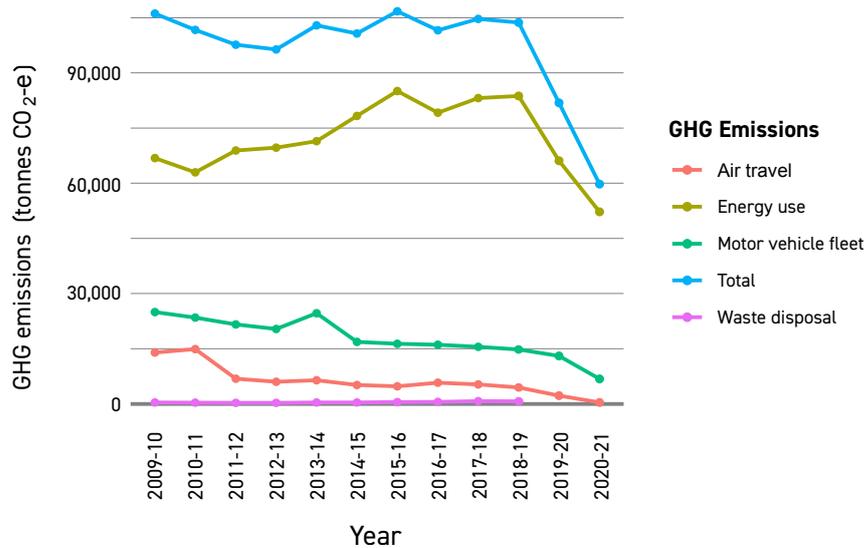


Figure 9: GHG emissions (t CO₂-e) per year, by emissions source, 2009-10 to 2020-21

Figure 10 shows the FRD 24D reportable GHG emissions for each entity in 2020-21, categorised by emission source. This graph shows office-based energy use is the largest contributor of FRD 24D reportable GHG emissions for all entities.

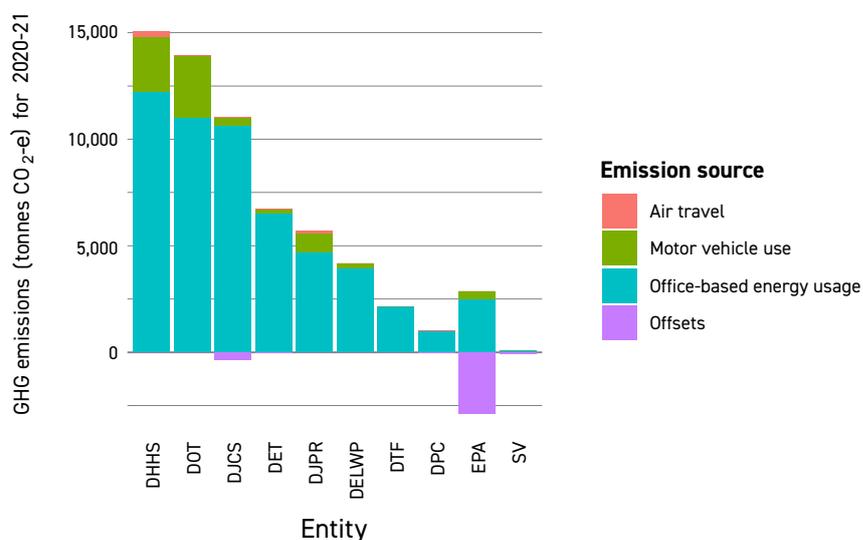


Figure 10: GHG emissions (t CO₂-e) by entity and emission source, 2020-21

Impact of remote and hybrid working settings

As was the case during the previous reporting period, 2020-21 was disrupted by the COVID-19 pandemic.

Two years ago, as reported in the 2018-19 Strategic Audit report and prior to the COVID-19 pandemic, only one indicator had improved by more than 50% since the baseline year (2009-10). As part of the shift to remote working during 2020 and 2021, there is now much less office-based activity, air travel and use of the motor vehicle fleet, which has resulted in seven indicators having now improved by more than 50% since the baseline year. Reductions in energy usage, motor vehicle travel and plane travel have led to a 26% reduction in greenhouse gas (GHG) emissions within the scope of FRD 24D reporting during the past year, and a 41% reduction during the past two years.⁶³

Given that the VPS shift to remote working occurred for approximately a quarter of the 2019-20 financial year and several entities use data for the 12-month period from 1 April to 31 March for their annual EMS reporting, the 2019-20 EMS data was less affected by the VPS shift to remote working that occurred from March 2020. This was not the case during 2020-21, with the impacts of remote working resulting in some significant reductions in energy, paper and water usage, as well as motor vehicle and plane travel, during the 2020-21 EMS reporting period.

The shift to remote working has meant that some previously routine data collection and therefore indicator performance assessments cannot be made. Like for the 2019-20 reporting year, most Victorian Government entities were again unable to complete waste audits during 2020-21.

In its current format, only transport and office-based indicators such as energy usage, waste and recycling, paper usage and water consumption are in the scope of FRD 24D EMS reporting. This means that only one side of the story is currently being presented, which is the improvement in office-based environmental performance that is being driven by significantly fewer VPS employees attending the office. While we have seen improvements in the office-based environmental performance, it is unknown whether VPS employees working from home have a bigger or smaller environmental footprint than prior to the COVID-19 pandemic, because domestic energy usage, waste and recycling, paper usage and water consumption are not tracked in the current FRD 24D EMS reporting.

A preliminary analysis of Victoria's electricity usage during 2018-19 (that is, prior to the COVID-19 pandemic) compared with 2020-21 (that is, when there had been a large-scale shift to remote working in line with Victoria's COVIDSafe Settings) reveals no evidence to suggest that the increase of staff working from home has led to an increase in electricity consumption for the state. The concern was that big offices may have been using some electricity unnecessarily since the beginning of the COVID-19 pandemic when workers remained at home. This hasn't been the case, with electricity usage slightly dropping in Victoria after the COVID-19 restrictions came into effect during March 2020. Victoria's electricity consumption during 2020-21 was 3% less than during 2018-19 and in line with a pattern of gradually reducing electricity consumption in Victoria during the past decade.⁶⁴ However, the electricity distribution has changed significantly since the beginning of the pandemic. For example, the Australian Competition and Consumer Commission reported that households consumed between 10 and 30% more electricity between April and May of 2020 compared with 2019.⁶⁵ This is linked with a shift in where the electricity is being distributed, with information reported by Energy Networks Australia showing a shift toward more electricity being distributed to Melbourne's suburbs, to meet the residential demand.⁶⁶ This was in contrast to a decline of more than 30% in business demand for electricity in some locations, including Melbourne's central business district. Improved data collection and analysis by Victorian Government entities is required to determine the net impact of the shift to remote working on Victorian Government electricity and energy usage.

63. These calculations are based only on energy and transport GHG emissions, with waste GHG emissions excluded due to most entities being unable to complete waste audits during 2019-20 and 2020-21. Historically, waste disposal has accounted for less than 1% of the total GHG emissions reported within the scope of FRD 24D. Therefore, omitting waste GHG emissions will have an insignificant effect on the percentage changes reported during the past two years.

64. Australian Energy Regulator, 'Annual electricity consumption - NEM', <https://www.aer.gov.au/wholesale-markets/wholesale-statistics/annual-electricity-consumption-nem> accessed 12 January 2022.

65. Australian Competition and Consumer Commission 2020, 'Inquiry into the National Electricity Market Supplementary report-impact of COVID-19 and ACCC monitoring and enforcement activities', Canberra, Australia, <https://www.accc.gov.au/system/files/Inquiry%20into%20the%20National%20Electricity%20Market%20-%20Supplementary%20report.pdf> accessed 12 January 2022.

66. Energy Networks Australia, 'Mapping the impact of COVID-19 on electricity demand', <https://www.energynetworks.com.au/news/energy-insider/2020-energy-insider/mapping-the-impact-of-covid-19-on-electricity-demand/> accessed 12 January 2022.

Fewer staff working from the office also has an impact on the indirect GHG emissions from Victorian Government entities, with a reduction in the number of staff commuting to offices almost certainly leading to a significant amount of GHG emissions being avoided. This is estimated below to be a reduction of approximately 29,000 t CO₂-e for 2020-21 compared to 2018-19.

Reporting staff commuting GHG emissions is beyond the scope of FRD 24D, however SV has been reporting the GHG emissions associated with staff commuting for several years.⁶⁷ From 2016-17 to 2018-19, SV reported that staff commuting contributed between 100-110 t CO₂-e per year, but in 2020-21 it dropped to 12.5 t CO₂-e per year. This saving of nearly 100 t CO₂-e per year for a smaller entity like SV can be extrapolated out across the VPS, although some caution is required to interpret this extrapolation given there is a diversity of locations and commuting patterns across the VPS that is not reflected in the SV data. For 2018-19, on average, one FTE at SV contributed approximately 614 kg CO₂-e due to staff commuting. During 2020-21 this value dropped to 85 kg CO₂-e, which is a decrease of 529 kg CO₂-e per FTE. The Victorian Public Sector Commission reported that the VPS FTE was 55,726 as at 30 June 2021.⁶⁸ Extrapolating the SV decrease of 529 kg CO₂-e per FTE for the staff commute across 55,726 FTEs in the VPS leads to an estimated GHG reduction from the staff commute across the entire VPS of approximately 29,000 t CO₂-e for 2020-21 compared to 2018-19. This is significant because this estimated value of 29,000 t CO₂-e, which is beyond the scope of current FRD 24D reporting, is nearly half as much as the entire GHG emissions that are reported by Victorian Government entities within the scope of FRD 24D in 2020-21.

EMS implementation and reporting can be used to understand the environmental impact of large numbers of the workforce working remotely. For example, further research can establish if:

- there are benefits for reducing GHG emissions due to less commuting
- the energy grid can effectively distribute more electricity to suburban households and less to offices based in Melbourne's central business district
- a greater familiarity with video conferencing can help reduce GHG emissions associated with air and motor vehicle travel.

Procurement

FRD 24D states that entities are to discuss whether and how their procurement activities are environmentally responsible and support the objectives of the Environmental impact in procurement – procurement guide.⁶⁹

Green procurement reporting is nuanced differently across the entities, but all government entities consistently report that procurement activities support the objectives of the Victorian Government's Environmental Procurement Policy. For example, DELWP states that 'the Procurement Team with Corporate Services provides internal procurement advice to support and strengthen environmental procurement practices. Departmental templates for tendering and contracting incorporate requirements for tenders to demonstrate their environmental credentials and allow tender evaluation teams to weight and score this as a separate assessment criterion, where relevant'.⁷⁰ This procurement process outlined for DELWP, is replicated across many other entities. DTF notes in its 2020-21 Annual Report that it monitors whether suppliers are complying with environmental sustainability requirements through contract management mechanisms.⁷¹

67. Sustainability Victoria (SV) 2021, 'Annual Report 2020-21', Melbourne, Victoria, <https://assets.sustainability.vic.gov.au/susvic/Sustainability-Victoria-annual-report-2020-2021.pdf> accessed 12 January 2022.

68. Victorian Public Sector Commission, 'Employee numbers', <https://vpssc.vic.gov.au/data-and-research/data-facts-visuals-state-of-the-sector/employee-numbers/> accessed 12 January 2022.

69. Department of Treasury and Finance (DTF) 2018, 'FRD 24D Reporting of office-based environmental data by government entities', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/2018-05/FRD%2024D%20Reporting%20of%20office-based%20environmental%20data%20by%20government%20entities.DOCX> accessed 4 January 2022.

70. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

71. Department of Treasury and Finance (DTF) 2021, '2020-21 Annual Report', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/document/2020-21%20DTF%20Annual%20Report.pdf> accessed 12 January 2022.

Sustainable Development Goals

The SDGs are a blueprint to achieve an improved and sustainable future for all. They took effect on 1 January 2016 with the aim of assisting government, business and community in addressing global challenges by informing decision-making to achieve multiple outcomes. They provide a whole-of-systems approach to understand the trade-offs and mutual benefits between environmental, cultural, social and economic interests.⁷² The 17 Goals provide a comprehensive and integrated framework of 169 targets to support planning and reporting through to 2030. They provide business, government and civil society with a compelling framework for future growth that aims to be socially fair, environmentally sustainable and economically prosperous.

Science for Sustainable Development, the Commissioner's framework for the Victorian State of the Environment 2023 Report, articulates the value the SDGs add to environmental reporting in Victoria.⁷³ The SDGs:

- Assist in structuring the scientific assessments and framing the sustainable development narrative.
- Provide quantitative targets when they are absent in a jurisdiction's legislative or policy commitments.
- Enable an evaluation of how far Victoria is from achieving targets and where to prioritise resources.
- Facilitate an evaluation of interlinkages between environmental indicators and socioeconomic indicators, to maximise multiple benefits and minimise trade-offs.
- Enable strategic, forward-looking analyses and interventions that can accelerate progress towards environmental outcomes.

The Commissioner is committed to implementing the SDGs as a framework for environmental reporting for Victoria. Although exploratory in nature, the Victorian State of the Environment 2018 Report provided proof of concept for the key insights listed above.⁷⁴ The Science for Sustainable Development framework builds on this proof of concept. In December 2021, the Commissioner published the State of the Marine and Coastal Environment 2021 Report, which included a proposed method for adopting the SDGs for environmental reporting in Victoria as well as a process for identifying local priorities, an SDG synthesis and evaluation of specific targets.⁷⁵

Many countries, businesses and stakeholder organisations are taking up the challenge of the SDGs, with initial efforts including a range of evidence-based assessments.^{76,77,78}

The model of aligning SDG targets with existing indicators, as described in Science for Sustainable Development, has been applied to the FRD 24D indicators evaluated in this Strategic Audit report; 15 SDG targets across eight SDGs were found to align with the existing indicator suite of FRD 24D indicators. This alignment creates the opportunity to track and compare Victorian Government entity performance in the future against interstate and international government jurisdictions in a consistent fashion, as well as with industry.

Reporting in such a way leverages the power of the SDGs, enabling a more complete understanding of the impacts of decisions made as part of implementing an EMS. The 15 SDG targets relevant to FRD 24D are shown on the next page in Table 8.

72. United Nations, 'The Sustainable Development Agenda', New York, United States, <https://www.un.org/sustainabledevelopment/development-agenda/>, accessed 12 January 2022.

73. Commissioner for Environmental Sustainability (CES) 2020, 'Framework for the Victorian State of the Environment 2023 Report – Science for Sustainable Development', Melbourne, Victoria, https://www.ces.vic.gov.au/sites/default/files/publication-documents/CESV_Framework%20Report%202023_FINAL_WEB_OCT.pdf accessed 12 January 2022.

74. Commissioner for Environmental Sustainability (CES) 2019, 'Victorian State of the Environment 2018 Report – summary report', Melbourne, Victoria, https://www.ces.vic.gov.au/sites/default/files/publication-documents/SoE2018_SummaryReport.pdf accessed 12 January 2022.

75. Commissioner for Environmental Sustainability (CES) 2021, 'State of the Marine and Coastal Environment 2021 Report – Parts 1 and 2', Melbourne, Victoria, <https://www.ces.vic.gov.au/sites/default/files/publication-documents/State%20of%20the%20Marine%20and%20Coastal%20Environment%202021%20Report%20Part%201%20and%202021%20Report%20Part%202%20WEB.pdf> accessed 13 January 2022.

76. Allen C, Nejdawi R, El-Baba J, Hamati K, Metternicht G, Wiedmann T 2017, 'Indicator-based assessments of progress towards the sustainable development goals (SDGs): a case study from the Arab region', Sustainability Science, 12(6), pp. 975-989.

77. European Union 2020, 'Sustainable Development in the European Union: Monitoring report on progress towards the SDGs in an EU context – 2020 edition', <https://ec.europa.eu/eurostat/documents/3217494/11011074/KS-02-20-202-EN-N.pdf/334a8cfe-636a-bb8a-294a-73a052882f7f?t=1592994779000> accessed 12 January 2022.

78. Bertelsmann Stiftung and Sustainable Development Solutions Network 2018, 'SDG Index and Dashboards Report 2018', New York, United States.

DJCS and DELWP have aligned their EMS reporting with the SDGs. Across these two departments, five SDGs (Goals 6, 7, 11, 12, 13) have been linked with implementing EMS. Within their 2020-21 Annual Reports, these two entities did not provide information beyond listing the Goals that align with their EMS operations.^{79,80} Melbourne Water is an example of a public entity that is currently beyond the scope of FRD 24D but has been embedding the SDGs into its operations. In its 2020-21 Annual Report, Melbourne Water aligned its 'Path to Net Zero' and environmental performance reporting with seven SDGs (Goals 3, 6, 7, 11, 12, 13, 17).⁸¹

With the disruption the COVID-19 pandemic has caused to traditional ways of working by Victorian Government entities, the SDGs are an excellent contemporary mechanism to understand the trade-offs and co-benefits between social, economic, and environmental outcomes.

Table 8: Aligning SDG targets with EMS and FRD 24D reporting

Goal	Target	Alignment to EMS and FRD 24D
6 CLEAN WATER AND SANITATION 	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Water consumption
7 AFFORDABLE AND CLEAN ENERGY 	7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	Energy use and procurement
	7.3 By 2030, double the global rate of improvement in energy efficiency	Energy use
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Procurement
11 SUSTAINABLE CITIES AND COMMUNITIES 	11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Transportation
	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Waste and recycling
	11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels	Entity sustainability plans

79. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Annual Report 2021', East Melbourne, Victoria, https://www.delwp.vic.gov.au/_data/assets/pdf_file/0029/547760/AnnualReport2020-21.pdf accessed 11 January 2022.

80. Department of Justice and Community Safety (DJCS) 2021, 'Annual Report 20-21', Melbourne, Victoria, https://files.justice.vic.gov.au/2021-10/DJCS-Annual-Report-20-21_0.pdf accessed 12 January 2022.

81. Melbourne Water Corporation 2021, 'Melbourne Water Annual Report 2020/21', Melbourne, Victoria, <https://www.melbournewater.com.au/media/17991/download> accessed 12 January 2022.

Table 8: Aligning SDG targets with EMS and FRD 24D reporting

Goal	Target	Alignment to EMS and FRD 24D
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	Entity sustainability plans
	12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	Waste and recycling
	12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities	Procurement
	12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	Staff behaviour change
 <p>13 CLIMATE ACTION</p>	13.2 Integrate climate change measures into national policies, strategies and planning	GHG emissions and water consumption
 <p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p>	16.6 Develop effective, accountable and transparent institutions at all levels	Access to information – publicly accessible annual reports and data sets. Transparent process to set targets for entity environmental performance.
	16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	Access to information – publicly accessible annual reports and data sets
 <p>17 PARTNERSHIPS FOR THE GOALS</p>	17.14 Enhance policy coherence for sustainable development	Entity sustainability plans and cross-government policies

Opportunities

The most important opportunity is to enhance the current FRD 24D mechanism for environmental management and reporting.

The Climate Change Strategy released in May 2021 contained a whole of Victorian Government pledge for operations – including schools, hospitals and metropolitan trains and trams – to be powered by 100% renewable electricity by 2025.⁸²

This pledge, while providing a clear ambition to significantly improve Victorian Government environmental performance, highlights three major limitations of the current FRD 24D mechanism for reporting and assessing Victorian Government environmental performance. These limitations are described below and are framed as opportunities (1-3) for better environmental management in the future.

These three opportunities were described in last year's Strategic Audit report. However, the Climate Change Strategy was published in 2021 and heightens the need for FRD 24D to be significantly improved. The prospect of an enhanced FRD 24 mechanism is exciting and would empower Victorian Government entities to:

- progress towards net-zero GHG emissions
- provide accurate and transparent reporting to meet public expectations
- manage government exposure to climate-related risks (both physical and financial risks).

The fourth opportunity was introduced in last year's Strategic Audit report and is in response to the COVID-19 pandemic and the consequence of more government staff working from home.

1. **Only a very small proportion of GHG emissions from Victorian Government operations are within the scope of FRD 24D.** The limitations of FRD 24D for GHG emission reporting remains an issue that has been identified in previous strategic audits. FRD 24D is constrained to office-based environmental management, which is a small fraction of GHG emissions contributed by Victorian Government entities. Of the GHG emissions annually reported by Victorian Government entities, only 6% are within the scope of FRD 24D. The WoVG pledge to be powered by 100% renewable energy by 2025 is applicable to operations beyond office-based activities, therefore the scope of FRD 24D should be broadened beyond office-based emissions to include larger infrastructure sites such as hospitals, prisons, transport networks and water treatment plants. Any increase in scope should also be applicable to government entities beyond the departments - EPA Victoria and Sustainability Victoria. As of 1 January 2022, DTF published a list of 284 Victorian Government agencies that it considered to be subject to the Standing Directions 2018 under the *Financial Management Act 1994*.^{83,84}
2. **There are still significant issues with the accessibility, accuracy and consistency of the data reported by entities.** In the 2019-20 Strategic Audit report, the Commissioner highlighted an opportunity for any update to the scope of FRD 24D to include a provision ensuring the quality of data reported by each entity. This can be achieved by providing standardised tools and guidance for entities to report their environmental performance. Further details and examples are provided in the **Data integrity, reporting and analysis limitations** section of this Strategic Audit report. The current data process for this Strategic Audit report involves all data to be manually collated by the Commissioner. The Commissioner's data analysis and reporting would be made more efficient if the Commissioner could extract data in a standardised format from a single database to which each reporting entity uploaded their data. A process modernisation such as this would improve efficiency and reduce the potential to introduce erroneous data in the reporting cycle.

82. Department of Environment, Land, Water and Planning (DELWP) 2021, 'Victoria's Climate Change Strategy', East Melbourne, Victoria, https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0025/522169/Victorian-Climate-Change-Strategy-Accessible.pdf accessed 12 January 2022.

83. Department of Treasury and Finance 2021, 'Is your agency subject to the Standing Directions 2018 under the Financial Management Act 1994', Melbourne, Victoria, <https://www.dtf.vic.gov.au/sites/default/files/document/Is%20your%20agency%20subject%20to%20the%20Standing%20Directions%20under%20the%20Financial%20Management%20Act%201994%20%28updated%20May%202021%29.DOCX> Accessed 12 January 2022.

84. The Standing Directions 2018 under the Financial Management Act 1994 set the standard for financial management by Victorian Government agencies.

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3. **Currently, FRD 24D does not mandate or specify targets to be met for individual parameters required to be reported by entities.** WoVG pledges set a target for the government, but individual departments and entities have no individual targets and obligations. The lack of targets reduces the efficacy of this type of reporting framework because the reporting is less likely to drive improvements in environmental management practice without targets that need to be met. Victorian Government-wide targets for entity performance in accordance with FRD 24D, supported by a scheme that incentivises and rewards achievement of the targets, would be a welcome addition. Despite not being required to meet targets as part of the mandated reporting of office-based emissions under FRD 24D, it is encouraging to note that most entities do specify their own targets in their annual reports. For example, DELWP has set a target of net zero reported GHG emissions by 2025 and is implementing measures to reduce GHG emissions across its operations. DELWP has committed to net zero electricity emissions from 2021-22 in advance of the broader Victorian Government commitment to source 100% renewable electricity for its operations by 2025. This will be achieved primarily through additional Green Power purchasing in advance of a new State Purchasing Contract.

 4. **Entities can be empowered to research, analyse and report on the net effect of more staff working from home.** Other than SV reporting on GHG emissions associated with the staff commute (which was data that SV reported without any supporting analysis), entities have not provided any assessments of the impact of the large-scale shift to more staff working from home since the beginning of the COVID-19 pandemic. Being able to holistically analyse and understand the impacts of a greater proportion of staff working from home will better inform future environmental policy and performance within the Victorian Government to reduce its environmental footprint.

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