41ST PARLIAMENT

Education and Health Standing Committee

Report 2

MAKING HOPE PRACTICAL

Report of the inquiry into the response of Western Australian schools to climate change

Presented by
Mr C.J. Tallentire, MLA

June 2022

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Education and Health Standing Committee

Making Hope Practical

Report of the inquiry into the response of Western Australian schools to climate change

Report No. 2

Presented by

Mr C.J. Tallentire, MLA

Laid on the Table of the Legislative Assembly on 23 June 2022

Inquiry Terms of Reference

The Education and Health Standing Committee will inquire into the response of Western Australian schools to climate change. In particular, the inquiry will consider:

a. The co-benefits of climate action in schools

b. Climate change mitigation and adaptation actions currently being undertaken in schools, and the benefits they are achieving

c. Barriers that schools encounter in undertaking climate action and how these can be addressed

d. What more can be done to support schools to respond to climate change.

Chair's Foreword

All Western Australian students deserve an education that engages them with the pressing issues of our time. The response by schools to climate change involves facilitating intellectual understanding, making material improvements and enabling individual actions.

In embarking on this inquiry, the Education and Health Standing Committee has sought to acknowledge the progress already being made in the WA education sector and to highlight areas that could be improved.

Through the course of the inquiry the Committee heard from many dedicated educators who are committed to giving their students an evidence-based understanding of the reality of climate change and an opportunity to make changes as individuals that can cumulatively support state, national and international goals of net-zero emissions.

Many educators and members of school communities are inspirational in their persistence in advocating for the retrofitting of schools, so they become climate safe, so they are more energy efficient, more waterwise and better waste managers. Similarly, strong advocacy for behavioural change is being led by local school champions. It is incumbent on government to support their work, be it voluntary or in the case of school staff members, often done in addition to paid hours.

Most pleasing has been the emergence of a consistent theme: actions taken by individuals invariably produce co-benefits. A striking example of this is the co-benefits that stem from students using active transport like walking, bike riding or scooting to school. Not only does active transport reduce greenhouse gas and toxic fume levels and decongest our roads, but it also leads to a fitter, healthier and more road-wise student population.

The benefits of a climate safe school are many. In addition to progressing emissions reduction targets and improving student health, the potential for major cost savings on school utility bills are real. School corporate services managers need to join the ranks of school sustainability champions to lock-in the financial benefits.

Responding to the threat of climate change is a challenge for the whole of humanity. But, for young people it can simultaneously present as a threat to their future and as a problem that is beyond their sphere of influence.

The rise in the number of students who suffer from anxiety is of grave concern, some specifically nominate climate change as the cause of their anxiety. Well-designed school climate action and sustainability programs can help students regain hope and optimism and learn how they can bring about change.

Our WA education system has the capacity to teach the science, the economic and social dimensions of the climate change problem. Exciting inquiry-based learning approaches can be enormously powerful and can engage students at a deeper level.

The richness of climate change as a multidisciplinary learning opportunity cannot be overstated. Responding to the issue can be an opportunity for a student to develop an array of valuable communication and organising skills. The educational opportunities are extremely broad, ranging from studies of international institutions to learning the detail around the feasibility of technological solutions.

Students developing an understanding of energy usage, water consumption, waste and transport emissions are developing valuable life skills. This benefit should outweigh the view by some educators who feel the curriculum is already too crowded.

Our schools can play a vital role in WA acting on climate change, all while generating the array of other benefits detailed in this report.

I would like to thank my fellow Committee members, the Deputy Chair Lisa Baker MLA, Mrs Lisa Munday MLA, Ms Caitlin Collins MLA and Mr Kevin Michel MLA. Our diversity of perspectives, backgrounds and life-experiences has greatly assisted the quality of this report. Finally, I would especially like to thank the Committee's principal research officer Catie Parsons and research officers Rachel Wells and Sylvia Wolf. Their commitment and dedication have been essential to the success of the inquiry.

MR C.J. TALLENTIRE, MLA
CHAIR

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Executive Summary

Why this inquiry?

Climate action in schools is important because:

- it aligns with national and international obligations
- children and young people will be more severely impacted by climate change than other populations
- the significant physical and social footprint of schools places them in a unique position to effect change, and
- it acknowledges students' concerns over climate change, and empowers them with the knowledge and skills to transform climate anxiety into a sense of agency and possibility.

What are the co-benefits of climate action in schools?

The Department of Education should be widely promoting and funding climate action in schools because of the many and varied co-benefits for students, staff and the community.

The strong links between Aboriginal cultures, science and sustainability offer a holistic and relevant framework for student learning. Climate education also easily lends itself to practical, project-based learning and problem solving. These approaches are not only the future of education, but they engage students through their authenticity and relevance.

Climate action necessarily involves civic and social engagement, which allows students and staff to connect with their communities to build resilience and optimism, all while developing their individual and collective skills. The educative aspect of climate action in schools can have a ripple effect into families and the wider community.

Climate-friendly infrastructure and operational improvements offer financial savings through efficiency and long-term cost effectiveness. Audits and projects to reduce resource consumption can save money and provide excellent practical learning opportunities.

Active transport to school not only promotes physical health, but also developed knowledge of road rules, creates social interaction and a sense of self-reliance. Reduced traffic congestion around schools improves air quality and overall road safety. Sustainable diets that limit animal-sourced and highly processed foods are healthy and create less waste.

What is the role of the Department in helping schools to respond to climate change?

To create an effective systemic response to climate change, the Department of Education needs to set clear expectations and objectives for climate action in its sustainability frameworks, policies and initiatives, and provide expertise and support to achieve them.

Sustainable Schools WA is a whole-school planning framework which supports schools to establish a culture of sustainability. It is highly regarded because of its local ownership, flexible and holistic approach, and its collaborative and deliberative processes. However, its impact has been limited by lack of funding and system support.

Caring for Country Together is the Department's new sustainability framework. The Department has shown commitment to its implementation by establishing a dedicated sustainability unit, and the framework will benefit from inclusion of further detail over time. The success of the framework will depend on ongoing communication about its priority, and comprehensive professional development for staff.

Evidence to the inquiry strongly supported a mandate on climate action in schools, in light of the various barriers which threaten to displace it as a priority. However, the Department's firm position is that individual schools will be responsible for taking action in a way that suits their needs and expectations of their community. In the absence of a mandate, resource and financial incentives should be offered to encourage schools to fully engage with the sustainability framework.

What actions can schools take to respond to climate change?

A whole-school approach is the most effective and durable model to embed climate action in schools, as opposed to implementation in specific learning areas or by individual teachers. Principal support is crucial to success, although there is work to be done in improving principals' appreciation and understanding of this approach and its benefits.

While the majority of climate action in schools is led by volunteer 'champions', a whole-school approach is best facilitated by a paid sustainability coordinator. Expecting schools to fund these positions from their existing one-line budgets is unrealistic. Dedicated additional funding for these roles will demonstrate the Department's commitment to climate action.

Engaging corporate services managers and embedding climate action into school planning documents are also important factors in successfully implementing a whole-school approach to sustainability.

How can schools materially respond to climate change?

The Department is in the early stages of developing its strategic approach to reducing emissions from school infrastructure and operations, and has established baseline data

to inform and measure this. Introducing benchmarks for waste, water and electricity would give schools something to work towards for, and schools can be assisted to set their own targets through funded audits.

Buildings contribute significantly to greenhouse gas emissions. Although the Department has integrated sustainability guidelines into its design briefs for school buildings, they often lose priority due to capital expenditure constraints. There is a need for school building life cycle cost benefit analysis.

To date, transitioning schools to solar energy has been the major policy response of schools to climate change. This investment has been significant and is delivering real benefits to schools across WA. However, it is not an overall solution for decarbonising schools, and schools who do not receive funding face a significant barrier in high capital outlay. An incentivised loan scheme would support schools to implement their own energy infrastructure upgrades.

Although transport does not feature explicitly in the Department's *Caring for Country Together* framework, it has been working collaboratively with the Department of Transport to address the declining rate of active transport to school and traffic congestion around schools. One ongoing barrier is the difficulty demonstrating demand for a children's crossing warrant. The objectives of the warrant criteria should be reviewed to ensure they support active transport to school.

Funded by the WA Recovery Plan, the Department has also worked with the Water Corporation on projects to inform future water efficient infrastructure upgrades. Longer term investment in these projects is needed, given that schools are significant consumers of water. There is also an anomaly in water discounts given to private and public schools that may have the unintended effect of shielding private schools from the need to embrace water wise practices. This should be rectified.

There is a significant lack of waste infrastructure in schools, which requires funding and improvements at departmental level to support a reduction in waste to landfill. There is also substantial scope for the Department to prioritise green space and bushland protection in new and existing schools, and promote sustainable diets.

How can the curriculum be used to respond to climate change?

Curriculum is the sole mandate which the Department seeks to apply for schools to respond to climate change. This is through references to sustainability in the Humanities and Social Sciences (HASS) curriculum, and the cross-curriculum priority of sustainability – there is almost no explicit reference to climate change in the curriculum. The limitations to this are that curriculum cannot drive systemic reform in school operations and infrastructure, and that sustainability is fragmented, poorly understood and often overlooked as a curriculum concept.

Teachers have identified that they struggle with both the 'what' and the 'how' of teaching climate change. The Department recently invested significantly in developing a broad range of new curriculum materials – some of these will support teachers with 'what' to teach about sustainability and climate change. Professional development is also critical to building skills in teachers to know both 'what' and 'how' to embed sustainability and climate change effectively into their classroom programs. The Department should invest in targeted programs to build capacity in this regard. Mentoring and reducing teacher workload would also improve teachers' ability to deliver quality climate change education.

Pre-service teachers are not well prepared for climate-responsive teaching. Systemically, this could be improved by incorporating competencies for sustainability into national teaching standards.

Ministerial Response

In accordance with Standing Order 277(1) of the Standing Orders of the Legislative Assembly, the Education and Health Standing Committee directs that the Treasurer, Parliamentary Secretary to the Minister for Education and Training, Minister for Police, Minister for Planning and the Minister for Water report to the Assembly as to the action, if any, proposed to be taken by the Government with respect to the recommendations of the Committee.

Findings and Recommendations

Chapter 2 – Co-benefits of climate action in schools

Finding 1 **Page 15**

There is a solid base of evidence to support that climate action in schools provides a broad range of co-benefits for:

- student learning
- student and staff physical and mental health
- financial savings for individual schools and the education system, and

the wider community.

Recommendation 1 **Page 16**

That the Minister for Education and Training ensures that the wide range of co-benefits of climate action in schools is promoted in the Department of Education's frameworks, policies and initiatives, and that these co-benefits are given recognition by commensurate funding for sustainability initiatives.

Chapter 3 – Departmental strategies and frameworks

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Frameworks are the main way in which the Department of Education communicates its expectations and priorities to schools.

Finding 3 **Page 20**

The Sustainable Schools WA initiative reflects best practice sustainability education, offers many benefits to participating schools and is highly regarded amongst Western Australian sustainability educators and practitioners.

Finding 4 **Page 21**

The impact of the Sustainable Schools WA initiative has been limited by lack of funding and system support.

Recommendation 2 **Page 21**

That the Minister for Education and Training ensures that funding is given to support schools to adopt the Sustainable Schools WA initiative as a whole-school planning framework for sustainability and responding to climate change. This should include professional development on implementing the framework and funding support for networks.

Finding 5 **Page 23**

The establishment of a dedicated sustainability unit within the Department of Education is a promising sign of the Department's commitment to implementing its sustainability framework.

Recommendation 3 **Page 23**

That the Minister for Education and Training commits to funding the Department's sustainability unit beyond its initial two years.

Finding 6 **Page 23**

The Department has acknowledged student concerns over climate change, and expects that the new WA Student Council will reiterate students' views that responding to climate change should be a priority within the education system.

Finding 7 **Page 24**

The sustainability framework and roadmap are a good starting point for schools to assess their sustainability activity, and the addition of further detail and examples will improve their practical value.

Finding 8 **Page 24**

The Sustainable Schools WA Key Elements Rubrics are a sound model for further developing the Department's sustainability framework.

Finding 9 **Page 24**

Omitting transport as an operational focus area in the Department's sustainability framework is a missed opportunity for schools to contribute to transport and climate change outcomes.

Recommendation 4 **Page 25**

That the Minister for Education and Training ensures that transport is included as an operational focus area in future revisions of the Department of Education's sustainability framework.

Recommendation 5 **Page 26**

That the Minister for Education and Training ensures that the rollout of the sustainability framework is supported by clear and ongoing communication to schools about its priority, and comprehensive professional development for school staff.

Finding 10 **Page 27**

There is scope for the Department of Education to create a stronger mandate on climate action that does not restrict the independence of individual principals and schools.

Recommendation 6 **Page 28**

That the Minister for Education and Training directs the Department of Education to annually review engagement with the *Caring for Country Together* framework, with specific reference to climate action, both at school level and within the central and regional offices of the Department.

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Recommendation 11 **Page 37**

That the Minister for Education and Training ensures that the Department's Sustainability Unit and internal reference group formulate a plan to promote the benefits of climate action to school corporate services managers and facilitate training.

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Embedding sustainability and climate action into school policy and planning documents is an important factor in driving commitment and progress.

Recommendation 12 **Page 38**

That the Minister for Education and Training ensures that schools are required to develop a sustainability policy that specifically identifies climate actions that are achievable and relevant to their unique school context.

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The Department of Education is in the early stages of developing a strategic approach to reducing emissions from school infrastructure and operations.

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Recommendation 14 **Page 41**

That the Minister for Education and Training ensures that the Department of Education incorporates benchmarks for resource consumption in schools, and provides funding for schools to be audited to assist them to achieve these benchmarks.

Finding 19 **Page 43**

Expenditure constraints continue to compromise goals for improving the environmental performance of school buildings and achieving net zero emissions.

Recommendation 15 **Page 43**

That the Minister for Education and Training, Minister for Planning and the Treasurer adopt an agreed approach on prioritising the environmental performance of school buildings, in support of the WA government's net zero goals.

Recommendation 16 **Page 44**

That the Minister for Education and Training develops a proposal for an incentivised loan system for schools to implement energy infrastructure upgrades, similar to the Victorian Greener Government School Buildings program.

Finding 20 **Page 46**

The increased collaboration between the Department of Education and the Department of Transport could provide a blueprint for the Department of Education to work with and co-fund projects with other government agencies, such as the Department of Water and Environmental Regulation.

Recommendation 17 **Page 47**

That the Minister for Police directs the Children's Crossing and Road Safety Committee (Policy) to review the criteria for children's crossings warrants to ensure they support and enable active transport to school.

Finding 21 **Page 47**

The Department of Education's limited investment in supporting active transport to school is significantly disproportionate to the value of land sacrificed for parking at schools. A complete opportunity cost analysis may reveal that greater investment in active transport is justified.

Recommendation 18 **Page 48**

That the Minister for Education and Training ensures that investment in water efficient infrastructure in schools (especially retrofits) continues beyond the expiry of the current WA Recovery Plan-funded projects.

Finding 22 **Page 49**

Water discounts to private schools may have the unintended effect of shielding recipient schools from the need to embrace water wise practices.

Recommendation 19 **Page 49**

That the Minister for Water amends the *Water Services (Water Corporations Charges) Regulations 2014* so private schools benefit from the same price signals to drive water efficient behaviours as government schools.

Recommendation 20 **Page 50**

That the Minister for Education and Training ensures that waste management services and infrastructure are improved at a departmental level to support a reduction in waste to landfill. This should include funding for infrastructure and guidance to schools on implementing systems appropriate to their context.

Finding 23 **Page 52**

There are significant opportunities for the Department of Education to increase focus on protecting green space and bushland, and promoting low climate impact diets in schools.

Chapter 6 – Curriculum

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Teacher workload significantly impacts the ability to deliver quality sustainability and climate change education.

Chapter 1

The inquiry into the response of Western Australian schools to climate change

1.1 Early in the 41st Parliament, the Committee invited Dr Tarun Weeramanthri to give evidence on the findings and recommendations of the world-first Climate Health WA Inquiry, which was completed in November 2020. The Climate Health WA Inquiry reviewed the current planning and response capacity of the health system in relation to the health impacts of climate change, and considered areas for improvement in respect to climate change mitigation and public health adaptation strategies.[1]

1.2 Dr Weeramanthri said that the starting point for the Climate Health WA Inquiry was 'a practical sense of concern that not enough had been done about climate change' and understanding its health impacts.[2] Therefore, the inquiry's approach was to 'make hope practical, not despair convincing' by describing stories of change within the health sector.[3] It found that change would not be painless, but its benefits would far outweigh the costs.[4] The inquiry report was commended as 'a powerful call to action [which] articulates the urgency required for mitigation, adaptation and resilience building not only in health but across our communities, towns and cities.'[5]

1.3 Dr Weeramanthri's evidence was influential in the Committee's decision to undertake this inquiry. Aside from reviewing the current frameworks governing the response of schools to climate change and identifying areas for improvement, the Committee also wanted to 'make hope practical' by:

- collating evidence on the co-benefits of climate action in WA schools
- providing examples of the cost effectiveness of action
- distilling the enablers of success, and
- highlighting examples of change and achievement, particularly in the featured case studies.

1.4 The Committee acknowledges the significant body of existing work that has informed much of this inquiry. Environmental educators and education experts have extensively examined many of the issues discussed in this report – in particular, the co-benefits of climate action in

1 *Climate Health WA Inquiry: Final Report*, Department of Health, Perth, November 2020, p. 1.
2 Dr Tarun Weeramanthri, Independent Consultant; Inquirer, Climate Health WA Inquiry 2019-20, *Transcript of Evidence*, 6 August 2021, p. 2.
3 Dr Tarun Weeramanthri, Independent Consultant; Inquirer, Climate Health WA Inquiry 2019-20, *Transcript of Evidence*, 6 August 2021, p. 13.
4 *Climate Health WA Inquiry: Final Report*, Department of Health, Perth, November 2020, p. 131, Finding 7 & p. 31.
5 Doctors for the Environment Australia, *DEA welcomes the WA Climate and Health Inquiry*, media release, 7 December 2020.

schools and enablers of success are well established in research and practical examples. There have been periods of significant growth, collaboration and investment in the area of environmental and sustainability education, both within the state and nationally, and Western Australia has at times led the nation in developing best practice initiatives.[6] Practitioners are disappointed and frustrated that this momentum was lost.[7] There is a stronger imperative now, more than ever, to refocus priority on these areas.

I think we have seen how we can lead the world in a pandemic; now is the chance to actually do that in education as well.

- Samantha Schofield, SSTUWA

1.5 The Committee is mindful of the expectations placed on schools to address an increasing range of social problems. However, climate change is everyone's business and no sector is immune from its impacts and the responsibility to take action. We see the response of Western Australian schools to climate change as particularly important because of specific factors outlined below.

Climate action in schools aligns with national and international obligations

1.6 The national agreement on the goals for Australian education, the 2019 Alice Springs Mparntwe Education Declaration, creates an aspiration that students will:

- become active and informed members of the community who work for the common good, in particular sustaining and improving natural and social environments
- be resilient and develop skills and strategies to tackle current and future challenges
- recognise, adapt to and manage change
- have a sense of optimism about their lives and the future, and
- understand their responsibilities as global citizens and know how to affect positive change.[8]

1.7 Notably, the previous iteration of this agreement specifically referred to the need to equip students to address the unprecedented challenges of climate change – this was subsequently removed.[9]

1.8 In 2015, Australia also became a signatory to the Paris Agreement and the United Nations Sustainable Development Goals. Goal 13 relates specifically to Climate Action, but Goal 4 (Quality Education) and Target 4.7 recognise that understanding global systems is essential for promoting sustainable development and responding to climate change. The indicator for

6 Submission 24, Millennium Kids, p. 2; Submission 52, Australian Association for Environmental Education, p. 13.
7 Larraine Larri and Angela Colliver, 'Moving Green to Mainstream: Schools as Models of Sustainability for Their Communities – the Australian Sustainable Schools Initiative (AuSSI)', in Annette Gough et al. (eds), *Green Schools Globally*, Springer Nature, Switzerland, 2020, p. 80.
8 Education Council, *Alice Springs (Mparntwe) Education Declaration*, Council of Australian Governments, December 2019, pp. 6, 8.
9 Annette Gough, 'All STEM-Ed up: Gaps and Silences Around Ecological Education in Australia', *Sustainability*, vol. 13, no. 7, 2021, p. 5.

measuring progress towards this target includes 'the extent to which global citizenship education and education for sustainable development… are mainstreamed' at all levels of education.[10] Various reviews and inquiries have found that Australia has no overall national plan for achieving the UN Sustainable Development Goals and our performance ranking amongst signatory countries has fallen significantly.[11]

1.9 It is impossible to see how the aspirations of these national and international agreements could be achieved without including climate action in schools.

Children and young people are particularly vulnerable to the impacts of climate change

1.10 The impacts of climate change will not be uniformly experienced.[12] Children and young people will be more severely impacted by climate change than other populations because of their longer cumulative exposure, their developing physiological systems, the more direct ways they interact with their environment, and their dependence on adults.[13] Failing to deliver climate education and action in schools also fails those who will be most affected by it.

1.11 Climate change heightens existing social and economic inequalities, intensifies poverty and reverses progress towards improvement in children's well-being.[14] Certain cohorts of school students who already experience educational, health and social inequity will be at even greater risk from the impacts of climate change. These include Aboriginal students, students with pre-existing medical conditions and/or a disability, students in low socio-economic areas and students in regional and remote areas.[15]

I really see that schools can not only become educators in their communities, but they can also become change makers.

- Isabella Poll, Millennium Kids

Schools present significant opportunities to effect change

1.12 UNESCO has identified that the 'education sector remains under-exploited as a strategic resource to mitigate and adapt to climate change'.[16] Climate action can take material and

10 Submission 22, SDG Target 4.7 & Teachers for a Clean State Network, pp. 2, 22.
11 Submission 22, SDG Target 4.7 & Teachers for a Clean State Network, p. 21; Submission 52, Australian Association for Environmental Education; p. 10.
12 Submission 18, Australian Medical Association (WA), p. 2.
13 *Climate Health WA Inquiry: Final Report*, Department of Health, Perth, November 2020, p. 51; Naomi Godden et al., 'Climate change, activism, and supporting the mental health of children and young people: Perspectives from Western Australia', *Journal of Paediatrics and Child Health*, vol. 57, 2021, p. 1759.
14 Office of the United Nations High Commissioner for Human Rights, *Analytical study on the relationship between climate change and the full and effective enjoyment of the rights of the child*, United Nations General Assembly, May 2017, p. 14.
15 Submission 18, Australian Medical Association (WA), p. 2.
16 United Nations Educational, Scientific and Cultural Organisation, *Not Just Hot Air: Putting Climate Change Education into Practice*, UNESCO, Paris, 2015, p. 66.

immaterial forms, and the more than 1,100 schools across Western Australia offer broad scope for undertaking both.

Material and immaterial forms of climate action[17]	
Material 'things'	Our built world, the buildings, objects, vehicles, materials, and products that we use and consume, and waste products we generate
Immaterial 'ideas and ways'	How we think, what we value, how we act in the world, our visions and expectations of how the world should be

Relative to other industries, schools are not high contributors to emissions.[18] However, their physical footprint is large and potentially offers one of the most cost-effective carbon abatement opportunities in the built environment.[19] This opportunity has been recognised in the $45 million Schools Clean Energy Technology Fund (see Box 1.1). Schools are also significant consumers of water[20], and travel to and from school creates a significant burden on the metropolitan transport system, representing roughly 20 per cent of trips during peak periods.[21] Approximately 386,000 tonnes of carbon dioxide is produced each year from families driving to and from school in Perth.[22]

Box 1.1: Schools Clean Energy Technology Fund

The Schools Clean Energy Technology Fund (SCETF) is helping reduce energy costs in public schools and lower carbon emissions. It encompasses an extended Solar Schools Program to increase schools' access to solar panels, and the Virtual Power Plant (VPP) pilot program. Both of these initiatives are embedded in the Western Australian Climate Policy.

The initial stage of the Solar Schools Program, delivered as part of the 2019 School Maintenance Blitz, was estimated to deliver an annual energy saving of $1.7 million, with an average 27 per cent saving on electricity costs for the 30 regional schools participating. Greenhouse gas emissions were estimated to be reduced by 2,100 tonnes per year.

Round One of the SCETF in 2022 granted funding to 84 schools for solar panels, and added a further seven schools to the VPP pilot, bringing the total number of schools with VPPs to 17. The next round of funding applications will open in Term 2, 2022.

The Department also spent $1.86 million on a wholescale LED replacement trial project in 35 primary schools and two high schools. LED lighting is up to 90 per cent more efficient than incandescent lighting, and can account for between 20 and 40 per cent of a building's total energy use.

Source: Submission 60, Horizon Power; Submission 61, Department of Education; Hon Sue Ellery MLC & Hon Bill Johnston MLA, *More schools turn green with clean energy and solar*, media release, 17 February 2022.

17 Rachel Bolstad, *Climate change and sustainability in primary and intermediate schools: Findings from the 2019 NZCER national survey of English medium schools*, New Zealand Council for Educational Research, Wellington, 2020, p. 3.

18 Rachel Bolstad, *Climate change and sustainability in primary and intermediate schools: Findings from the 2019 NZCER national survey of English medium schools*, New Zealand Council for Educational Research, Wellington, 2020, p. 2.

19 Clean State, *'Bright Sparks' Solar Powered Schools Program*, accessed 28 January 2022, <https://www.cleanstate.org.au/>.

20 Mr Damien Postma, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 2.

21 Mr Justin McKirdy, Department of Transport, *Transcript of Evidence*, 18 February 2022, p. 6.

22 Submission 62, Department of Transport, p. 1.

1.13 The wide social reach of WA schools also places them in a unique position to influence individuals and communities to think and live sustainably. This aspect of climate action in schools is at least as important as any direct reduction in emissions, if not more so. Schools assume a social responsibility in educating staff, students and families more widely so they are in a position to make informed decisions outside school. This is strategically important to influencing individual behaviour change, as well as reflecting on the broader social and economic systems that are at the root of climate change.[23] It is this educative aspect that will ultimately determine success in responding to climate change.[24]

Climate action is an antidote to climate anxiety

1.14 The Committee has been particularly concerned by evidence on the prevalence of climate anxiety in children and young people. Anxiety is an emotion that alerts us to danger, which can cause us to search for more information about a situation and find practical solutions. This can have the beneficial effect of leading people to reassess their behaviour in order to respond appropriately. However, in the case of climate change, anxiety can easily become too intense and overwhelming where the crisis is complex and lacks a clear solution.[25]

> ***But you can only empower them with understanding. We give the understanding, the understanding gives the empowerment and the empowerment will prevent despair.***
>
> *- Emeritus Professor David Blair, UWA*

1.15 There is a strong rationale for addressing climate anxiety through climate action in schools.[26] Students are overwhelmed with information about climate change but have much less knowledge and understanding about its causes and solutions.[27] Numerous studies among students have found they demonstrate low content knowledge and conceptual understanding of climate change.[28] This fuels both misconceptions and despair, and students are further disempowered by a lack of opportunity to take action.[29]

1.16 As an antidote, action dispels pessimism and creates a sense of agency and possibility.[30] In schools, this means empowering students with the knowledge and practical skills to take

23 Centre for Universal Education, *A new green learning agenda: Approaches to quality education for climate action*, Brookings Institution, Washington DC, January 2021, p. 16.
24 Submission 20, Catholic Education Western Australia, p. 2.
25 Caroline Hickman et al., 'Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey', *Lancet Planet Health*, vol. 5, December 2021, p. 863.
26 Submission 20, Catholic Education Western Australia, p. 3; Submission 38, Commissioner for Children and Young People, p. 5.
27 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 4; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 6.
28 Submission 31, Dr Efrat Eilam, p. 3.
29 Submission 49, Harry Butler Institute, Carbon Positive Australia & South Padbury Primary School, p. 3; Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2022, p. 5; Mrs Anne Fairbanks, Western Australian Council of State School Organisations, *Transcript of Evidence*, 22 November 2022, p. 3; Dr Vanessa Rauland, Climate Clever, *Transcript of Evidence*, 22 November 2022, p. 9.
30 *Climate Health WA Inquiry: Final Report*, Department of Health, Perth, November 2020, p. 131.

personal and collective action.[31] Utilising a problem-solving approach, rather than just delivery of information, will have particular benefits for both student learning and wellbeing.[32]

Climate action in schools validates student concerns and voices

1.17 By its very nature, the education system should place student needs at the centre of its decision-making. The instinct to protect young people from distress is understandable, but ignoring climate change or telling young people there is nothing to worry about does not address the validity of their concerns.[33]

1.18 School Strike 4 Climate has convened twice during the course of this inquiry and it is clear that students feel their concerns over climate change are being dismissed. In addition to decision-makers taking action more widely, the education system should validate student voices by facilitating climate action in the environment where children and young people spend most of their time outside home.

> ***If kids are talking about it, then we need to empower them to do something practical.***
>
> *- Catrina Luz Aniere, Millennium Kids*

Terminology

1.19 Much of the existing research in this area relates to Education for Sustainability (EfS), which is an internationally recognised educational approach that moves beyond just imparting knowledge about the environment to building capacity for transformational change. Many social, economic, political and cultural issues involving human activity and its impacts fall under the umbrella of EfS. In this way, it is a much broader concept than 'environmental education.'[34] For simplicity, our references in this report are to 'sustainability', but we intend it to encompass this broader concept.

1.20 We have also become conscious during the inquiry that 'sustainability' and 'sustainable development' are overused, complex and often poorly understood terms. There are difficulties arriving at an agreed definition, although the most commonly used is 'development that meets the needs of the present without compromising the ability of future generations to meet their needs.'[35]

1.21 Climate action is just one element of sustainability, but the latter cannot be achieved without the former. Because of this inherent link, we have tended to use the terms interchangeably throughout this report.

31 Submission 55, Angela Rossen, p. 3.
32 Submission 46, Telethon Kids Institute, p. 2.; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 6.
33 New Zealand Council for Educational Research, *Leadership and school-wide climate responses*, Research Briefing 2, May 2021, p. 1.
34 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 32.
35 United Nations World Commission on Environment and Development, *Our Common Future*, Oxford University Press, 1987 (Bruntland Report).

Chapter 2

Co-benefits of climate action in schools

2.1 Climate action in schools is a worthwhile endeavour on its own, but also offers significant co-benefits for students, teachers and the broader school community. These co-benefits are widely acknowledged and provide an extra incentive for the education system to be leading and promoting climate action, and assisting schools to implement climate change education and initiatives.

Student Learning

Acknowledging the link between Aboriginal culture and sustainability

2.2 Aboriginal perspectives provide a holistic and highly relevant framework for teaching WA school students about sustainability. Sustainability is an inherent part of Aboriginal spirituality, knowledge and culture. This way of thinking and being can help young people to understand their environment, their relationship to it and how they can live in sustainable ways.[36]

2.3 Like sustainability, Aboriginal and Torres Strait Islander histories and cultures is a cross-curriculum priority in the Australian Curriculum – and similarly, its lack of explicit inclusion in the curriculum means it is often overlooked in teaching programs.[37] Links between the two are also not explicit in the curriculum, although the School Curriculum and Standards Authority is working on embedding elaborations in the curriculum which make the connections between Aboriginal cultures, science and sustainability.[38]

2.4 There is real scope to incorporate practical outdoor learning in both areas, which has proven to be effective in engaging both Aboriginal students and at-risk students. However, all students should enjoy the benefits of this approach – it offers a richer learning experience than classroom instruction, and students understand Aboriginal culture and approaches to sustainability as something real that happens on the land they stand on.[39] Aboriginal and non-Aboriginal

> ***I am excited… we could actually start to see some major changes for Aboriginal kids, where they would know about caring for country, they would know about what is causing the damage to their sacred sites, their sites of significance, and the understanding of that affinity and that connection that they have to land.***
>
> *- Donna Nelson, Australian Association for Environmental Education*

36 Submission 33, Dr Brad Gobby, Dr Jane Mereweather and Dr George Variyan, p. 4; Miss Jasmina Nikolovski, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 10.

37 Ms Donna Nelson, Australian Association for Environmental Education, Transcript of Evidence, 22 November 2021, p. 9.

38 Mr Allan Blagaich, Department of Education, *Transcript of Evidence,* 24 November 2021, p. 6.

39 Miss Jasmina Nikolovski, Australian Association for Environmental Education, Transcript of Evidence, 22 November 2021, p. 10.

students can work alongside each other to develop a deeper understanding of sites of significance and connection to country.[40]

2.5 Learning programs that meaningfully demonstrate the deep connection between Aboriginal culture and sustainability are limited. Some existing programs, such as Two-Way Science and Kids on Country, are realising the benefits of practical outdoor learning that demonstrates the strong links between sustainability and Aboriginal culture and histories.[41] Some schools are more successful at embedding both Aboriginal and Torres Strait Islander histories and cultures and sustainability throughout language, science and HASS learning areas, incorporating on country learning and the expertise of independent indigenous educators. [42] However, these programs and approaches are not yet universal across schools. The Department must work towards placing the diverse and accumulated knowledge of Indigenous custodians more firmly at the centre of sustainability education and climate action in schools.[43]

Practical and project-based learning is the future of education

2.6 Climate action in schools often involves practical learning projects, problem-solving and innovation. This kind of learning has been shown to:

- engage students – students want to learn more about how climate change will impact their future and what action they can take to respond. Climate action in schools makes education practical, relevant and connected to students' real world lives.[44] This can help improve students' attitudes towards certain learning areas, particularly science, mathematics and STEM.
- build important skills – this includes researching, collaborating and interpersonal skills, pitching ideas, critical thinking, leadership, and social and civic engagement.[45] All of these prepare students for life beyond school.

2.7 Inquiry-based, practical learning is the future of education.[46] It reflects the skills and motivations needed to address complex, interdisciplinary problems such as climate change:

> Powerful motivators of learning are authenticity (understanding the relationship of what is learned to the world we inhabit) and relevancy (understanding the relationship of what we learn to our values). Project- and problem-based learning provide many opportunities for authentic, relevant learning and tap into our intrinsic interest in knowing and understanding.[47]

40 Ms Donna Nelson, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 9.
41 Submission 24, Millennium Kids, p. 13 and 14.
42 Submission 24, Millennium Kids, p. 13, Submission 20, Catholic Education WA, p. 4 and 5.
43 Submission 25, The State School Teachers' Union of WA, p. 10.
44 Submission 40, Catherine Baudains, p. 3.
45 Submission 24, Millennium Kids, p. 5; Ms Jennifer Blair, Western Australian Council of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 4.
46 Natalie Gibb, *Getting Climate Ready: A guide for schools on climate action,* United Nations Educational, Scientific and Cultural Organization, Paris, p. 13.
47 International Commission on the Futures of Education, *Reimagining our futures together – A new social contract for education*, UNESCO, Paris, 2021, p. 50.

2.8 The WA education system has the opportunity to be a leader by supporting authentic and relevant student learning through climate action in schools.

Case study: Millennium Kids

'We do not run an education program; we run an inquiry process.'

Millennium Kids is a WA youth-led environmental organisation, established in 1999. It was founded on kids' beliefs that governments at all levels were not doing enough to tackle environmental and sustainability issues. Its core belief is that young people should be involved in democratic decision-making and developing their own practical action projects to address issues in their communities.

Millennium Kids has influenced numerous programs to support schools to take up environmental education and sustainability actions (e.g. Your Move, Clean Up Australia), as well as creating its own initiatives. These include:

- One Thousand Actions for the Planet: a project-based learning model where students learn about the UN Sustainable Development Goals, and design and pitch practical ideas for change.
- Youth Led Climate Change Deliberations: Run by kids, for kids, these citizens' assemblies provide opportunities to practise democratic politics, and co-create new understandings about climate change (considering tough problems, learning about disparate viewpoints, creating options, ascertaining trade-offs, recommending coherent ways forward).
- Green Lab: A youth-led citizen science initiative to adopt, monitor and care for trees in urban landscapes across Perth. By caring for bushland and trees, kids increase the understanding and value of these spaces in combatting the urban heat island effect, filtering air and absorbing traffic noise, providing native animal habitats, and supporting health and wellbeing.

Millennium Kids' work has been recognised by awards from the UN Association of Australia and the Banksia Foundation.

Source: Submission 24, Millennium Kids; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 5; Millennium Kids, *Green Lab,* accessed 13 May 2022, <https://www.greenlab.org.au/>.

Healthy environments support learning and wellbeing

2.9 Sustainable school buildings with clean air, natural lighting and ventilation are proven to be better for student learning. Well designed, attractive schools are likely to have higher attendance rates.[48] 'Green' school buildings have been shown to:

- improve student learning and engagement by 15 per cent
- improve test scores by 25 per cent
- improve the health and wellbeing of staff and students by 41.5 per cent, and

…the capacity to link different parts of the curriculum with real life, tangible projects that children can engage with, see their learning come to life, see their leadership skills rise to the fore, see those teamwork skills that we know employers are talking about needing from young people… with those to have a sustainability bent I think is really, really powerful.

- Jennifer Blair, WACSSO

48 Office of the Victorian Government Architect, *Good Design + Education*, 21 December 2021, accessed 23 May 2022, <https://www.ovga.vic.gov.au/>.

- have a substantively positive effect on teacher retention.[49]

2.10 Conversely, air pollution has been linked with decreasing academic performance.[50] Its impacts on students' physical health are further discussed below.

Physical Health

Nature-based education supports good health

2.11 Climate action in school offers students and teachers the opportunity to get outside the classroom in nature. While the physical activity alone can improve health, research has also shown there are broader health benefits from nature-based education[51] - for example, being in a forest or bushland area has been shown to result in improved immune, cardiovascular, hemodynamic, neuroendocrine, and metabolic function.[52] Spending time in nature has also been shown to improve mental health and wellbeing and have positive impacts on emotional state, attitude, depression, stress, and mental relaxation.[53]

2.12 Exposure to high levels of particulate pollution can increase respiratory disease, allergies, and asthma in children.[54] Climate action that decreases greenhouse gas emissions will also reduce local air pollution and its negative health effects.[55]

Active transport offers more than just health benefits

2.13 Active transport to school delivers many benefits. The physical health of staff and students is greatly improved through the regular exercise of active travel to and from school. Cardiovascular health, the likelihood of being overweight or obese, mental alertness and concentration levels are all made better by active travel.[56] Walking, riding or scooting to school can also be a social time involving interaction with a student's peers.

2.14 Using local transport and road networks develops traffic sense and an understanding of road safety principles. Active transport also gives students a sense of self-reliance and confidence in their ability to reach destinations through their own physical effort or through using public transport.[57]

2.15 Reducing the number of motor vehicles around schools has enormous road safety benefits. Fewer vehicles also means less engine idling time around schools, improving air quality.[58]

49 Green Building Council of Australia, accessed 20 April 2022, <https://www.gbca.org.au/>.
50 Submission 18, Australian Medical Association, p. 2.
51 Submission 40, Dr Catherine Baudains, p. 3.
52 Submission 49, Murdoch University Harry Butler Institute, Carbon Positive Australia, South Padbury Primary School, p. 5.
53 Submission 24, Millennium Kids, p. 7; Submission 49, Murdoch University Harry Butler Institute, Carbon Positive Australia, South Padbury Primary School, p. 4.
54 Submission 18, Australian Medical Association, p. 2.
55 Climate Health WA Inquiry: Final Report, Department of Health, Perth, November 2020, p.89.
56 Submission 17, Dr Tarun Weeramanthri p. 1 and 2.
57 Victoria State Government Achievement Program, *Benefits of active travel to school*, 12 March 2021, accessed 23 May 2022, <https://www.achievementprogram.health.vic.gov.au>.
58 Submission 45, Climate Change Response, p. 3.

Reduced traffic congestion leading to a consequent reduction in road crashes is a further social, health and economic benefit.[59]

Case study: Your Move Schools

The Department of Transport's Your Move Schools program supports school communities to increase walking, bike riding and public transport use by enabling school staff and parents to become school champions.

The program provides teaching resources, expert advice, the ability for each school to share their story online, and access to grants and rewards. It encourages schools to build a team comprised of students, teachers and the local school community to help organise and run Your Move events and activities.

The related Connecting Schools Grant program in led by the Department of Transport and is partly funded by the Department of Education. The grant program is aimed at improving bicycle access, wayfinding, bicycle education and end-of-trip facilities for schools that are taking part in the Your Move Schools program. Participating schools are eligible for a variety of grant packages depending on their Your Move accreditation level. Demand for the grants in currently at an unprecedented level. In 2021, additional funding was provided by the Department of Transport to try and meet demand.

Over the last seven years the Your Move Schools program has achieved a 5% decrease in car use amongst participating schools. This has significantly benefited the transport network and economy, but it has also resulted in a reduction of 1,635 tonnes per year in carbon dioxide equivalent. Participation in the Your Move Schools program has increased from 56 schools in 2017 to 172 schools in 2020.

Sources: Submission 62, Department of Transport; Department of Transport, Your Move, Connecting Schools Grant, accessed 3 May 2022, <https://www.yourmove.org.au/>, Ms Helen Ginbey, Department of Transport, *Transcript of Evidence,* p. 9.

Sustainable diets are also healthy

2.16 Up to 37 per cent of GHG emissions are attributable to the food system, from agriculture and land use, storage, transport, packaging, processing, retail and consumption. Therefore, the mitigation potential of dietary change is high.[60] Supporting sustainable diets in schools can improve students' overall health and reduce their environmental footprint.[61] Limiting highly processed and animal-sourced foods, and increasing consumption of locally grown plant-based foods and alternative proteins clearly supports good health. Highly processed foods also use a lot of resources in manufacturing, packaging and distribution, and they create significant waste.[62] Animal-sourced foods cause significant environmental damage. Livestock in particular are responsible for approximately half of food-generated GHG emissions.[63]

2.17 Encouraging students to adopt sustainable diets and reduce food waste at school may lead them to make similar behaviour changes beyond school and influence family decisions.[64]

59 Submission 62, Department of Transport, p. 1.
60 Intergovernmental Panel on Climate Change, *Special Report on Climate Change and Land*, 2019, p. 439.
61 Investing in early nutrition and food systems for human and planetary health, The Lancet, Lancet Child-Adolescent Health 2021, p. 1.
62 Investing in early nutrition and food systems for human and planetary health, The Lancet, Lancet Child-Adolescent Health 2021, p. 1.
63 Celia Green et al, 'The Greenhouse Gas Emissions of Various Dietary Practices and Intervention Possibilities to Reduce This Impact', in Talia Raphaely and Dora Marinova (eds), *Impact of Meat Consumption on Health and Environmental Sustainability*, IGI Global, Hershey PA, 2016, p. 2.
64 Submission 17, Dr Tarun Weeramanthri, pp. 1-2.

Mental Health

Climate action builds resilience and mitigates the mental health impacts of climate change

2.18 There is limited evidence on effective support mechanisms to help children and young people cope with climate change.[65] However, research suggests student and staff mental health can be improved through the positive psychology of taking action to address or mitigate the problem. This increases resilience as people move through feeling overwhelmed, to understanding, to a sense of empowerment through constructive action.[66]

2.19 Resilience and empowerment can also be built through social and civil engagement, and developing students' individual and collective skills. Engaging in organised action can help students manage their anxiety and maintain optimism.[67] Finding a community with similar views to take action with can make them feel like they are not alone and show that significant change is possible. This instils young people with hope, instead of feeling powerless. This type of engagement can also encourage young people to lead other climate actions in their schools, at home and in their local communities.

Financial Savings

Saving money can be an incentive for some schools to take climate action

2.20 Financial savings should not be the prime motivator for climate action. However, they are a welcome co-benefit and reward for schools that implement operational changes, and can be an initial incentive for schools beginning to consider climate action.[68]

2.21 Utilities make up a significant portion of a school's operating budget.[69] When schools reduce their consumption and costs, savings can be reinvested into additional sustainability initiatives and climate-friendly infrastructure upgrades.[70] We heard evidence of a school that self-funded a part-time sustainability coordinator through the financial savings achieved by their sustainability efforts. Their ongoing expertise led to further financial savings and successful implementation of a whole-school approach to sustainability.[71] Another school

65 Naomi Godden et al., 'Climate change, activism, and supporting the mental health of children and young people: Perspectives from Western Australia', *Journal of Paediatrics and Child Health*, vol. 57, 2021, p. 1761.

66 Submission 22, SDG Target 4.7 & Teachers for a Clean State Network, p. 3; Submission 47, Australian Parents for Climate Action, p. 2; Mrs Anne Fairbanks, Western Australian Council of State School Organisations, *Transcript of Evidence,* 22 November 2021, p. 3; Dr Vanessa Rauland, Climate Clever, *Transcript of Evidence*, 23 February 2022, p. 9.

67 Naomi Godden et al., 'Climate change, activism, and supporting the mental health of children and young people: Perspectives from Western Australia', *Journal of Paediatrics and Child Health*, vol. 57, 2021, p. 1761.

68 Submission 28, Environment House, p. 5; Submission 50, ClimateClever, p. 6.

69 Submission 56, Mount Pleasant Primary School, p 2.

70 Submission 50, ClimateClever, p2.

71 Submission 26, Kathy Anketell, p. 3; Submission 52, Australian Association of Environmental Education, p. 39.

saved up to $10,000 a year from conducting an energy and water audit and implementing recommendations that didn't even involve retrofits.[72]

2.22 The audit process used to reduce water and energy consumption or reduce waste produced, provides an excellent learning opportunity for students. They can learn about the metrics used and they can apply maths skills to costing the benefits of water, energy and waste reduction initiatives.

2.23 Calculating important comparative unit indicators, such as litres of water consumed per student per day or kilowatts of electricity used per student or kilos of waste produced, provides the base for important budgeting skills.[73]

Case study: ClimateClever

ClimateClever is a WA-based climate technology start-up that helps schools measure and reduce their carbon footprint, and engages students in the process. It was created in response to a significant barrier identified as part of the Low Carbon Schools Pilot Program – namely, that schools had few tools to track their resource consumption and costs, and convert these into emissions reductions.

The web-based platform allows students and staff to log in and enter data, identify and manage low carbon actions and track progress throughout the year. Online tools include a carbon footprint calculator, a building audit tool, an interactive action plan, a cost-benefit calculator and curriculum-based learning resources. The program also includes individual and forum advice, quarterly meetups, progress reports and a tree planting program.

The Low Carbon School Pilot Program demonstrated that many low carbon actions have little or no cost. ClimateClever Schools guides schools through a range of low, medium and higher cost actions they can undertake, from behaviour change actions to bigger retrofits and upgrades.

There are currently 80 participating schools across Australia, with a quarter of those in WA. Some participating schools have been able to achieve up to 30% savings on their utility bills on less than four months. A home and business version of the program is also available.

Source: Submission 50, ClimateClever.

Climate action is an investment in the future

2.24 The education system needs to look at sustainability projects and sustainability across the system as an investment in the future, not simply as a cost.[74] The initial outlay capital upgrades may seem high but the long-term cost effectiveness is justified against increasing operational costs, as well as the broader benefits for health, wellbeing and learning.

2.25 Further, while taking climate action might seem expensive, it is cheaper than the cost of inaction. Weak climate action will only cost far more to correct in the future, as costlier and drastic reductions in emissions are required while covering the increasing costs of unwanted impacts of climate change.[75]

72 Submission 28, Environment House, p. 5.
73 See, for example, Sydney Water, *Water audit*, accessed 23 May 2022, <https://www.sydneywater.com.au/>.
74 Mrs Anne Fairbanks, Western Australian Council of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 5.
75 Tom Swann et al., *Cold shower on economics of global warming*, The Australia Institute, Canberra, April 2019, p. 4.

Community

Climate action in schools engages the wider community

2.26 Climate action in schools can engage local communities and develop a broader sense of agency.[76] Sustainability initiatives can connect schools to a wider range of external stakeholders who offer schools expertise and engaging learning experiences. This can make students feel their actions are much more purposeful, while promoting enthusiasm and inspiring students to try harder to achieve excellent results.[77]

2.27 Local communities can also be inspired by school climate action to work together and apply creative problem solving to achieve a common goal.[78] This can help to reduce anxiety, vandalism and isolation and improve outcomes, a sense of identity, and connection.[79]

Education reaches beyond school gates

2.28 Implementing sustainability practices at school can have a rippling effect in influencing parents and the wider community to make sustainable choices and behaviour changes.[80] Students can take home information and real-world actions they have learnt at school and implement it into their own home. Students have the ability to start discussions with other people in their households on what they can do to help with the climate crisis.[81] If these parents and other people are in a position of influence in society then the benefits could be far greater. [82] Schools are in a good position to show leadership by addressing community concerns and educating their local communities. [83]

2.29 Past examples have shown this to be an effective approach, such as school-based anti-smoking campaigns in the 1990s. Education modules were designed and implemented at all levels of the school system. This program resulted in many parents quitting smoking, due to their children 'nagging' and relaying the hazards of smoking.[84] Schools collaborating with energy providers have also helped raise awareness of the need for the whole community to transition to green energy sources.[85]

School strikes for climate action

2.30 During the course of this inquiry there have been two school strikes for climate action.

2.31 While some may hold that school students are too young to engage in the democratic right to protest and that their views may merely be a reflection of those of their parents, it's

76 Submission 4, Dunsborough Primary School, p. 2.
77 Submission 40, Dr Catherine Baudains, p. 5.
78 Submission 40, Dr Catherine Baudains, p. 4.
79 Submission 40, Dr Catherine Baudains, p. 5.
80 Submission 20, Catholic Education Western Australia Limited, p. 1; Submission 24, Millennium Kids, p. 8; Submission 48, School of Education, Edith Cowan University, p. 1; Submission 55, Angela Rossen, p.4.
81 Submission 48, School of Education, Edith Cowan University, p. 1; Submission 55, Angela Rossen, p.4; Submission 56, Mount Pleasant Primary School, p. 2; Submission 11, Waste Authority, p. 2.
82 Submission 48, School of Education, Edith Cowan University, p. 1.
83 Submission 24, Millennium Kids, p. 8.
84 Submission 48, School of Education, Edith Cowan University, p. 1; Submission 55, Angela Rossen, p.4.
85 Submission 23, The University of Western Australia, Einstein-First Project p. 2; Submission 56, Mount Pleasant Primary School, p. 2.

important to consider the beneficial aspects of being involved in a protest action, namely skills in:

- organising
- communicating
- understanding the political process, including engagement with parliamentary committees
- collaborating with similarly minded campaigners
- debating with those who hold opposing views.[86]

Schools that are planned for sustainability benefit their communities

2.32 Well-located, planned and designed schools can promote climate-friendly behavior and have positive health and wellbeing impacts on their local communities. If street networks connecting to schools are designed for light traffic, more students are likely to walk or cycle to school. The community can also benefit from efficient land use. Car trips and congestion can be reduced when schools are co-located with related services such as education support services and childcare centres. Shared use of public open space and community infrastructure can save money and reduce water usage.[87]

Co-benefits need greater recognition and promotion

2.33 It seems clear to us that there is a well-established body of evidence that demonstrates the co-benefits of climate action in school. However, there was a sense of frustration and weariness amongst witnesses that these co-benefits still need to be analysed and justified, in 2022, when time is running out to take climate action.

2.34 The Department of Education should be actively and widely promoting all of the co-benefits of undertaking climate action to schools in its frameworks and initiatives. This is an important factor in bringing all members of school and wider communities on board to transform climate action from a 'nice to have' into 'core business.' The co-benefits of climate action in schools also demonstrate that investing in sustainability initiatives will pay significant dividends for students, staff and the community over time, which justifies funding priority.

Finding 1

There is a solid base of evidence to support that climate action in schools provides a broad range of co-benefits for:

- student learning
- student and staff physical and mental health
- financial savings for individual schools and the education system, and
- the wider community.

86 Kellie Bousfield & Jacquie Tinkler, 'Student protests show Australian education does get some things right', *The Conversation* (web-based), 6 December 2018, accessed 23 May 2022, <https://theconversation.com/au>.

87 Submission 35, Department of Planning, Lands and Heritage, pp. 2-3.

Recommendation 1

That the Minister for Education and Training ensures that the wide range of co-benefits of climate action in schools is promoted in the Department of Education's frameworks, policies and initiatives, and that these co-benefits are given recognition by commensurate funding for sustainability initiatives.

Chapter 3

Departmental strategies and frameworks

Schools form part of the overall strategy for net zero

3.1 In August 2019, the WA government announced its aspiration of net zero emissions by 2050. Since then, climate action has been embedded in numerous whole-of-government policy requirements and priorities that will affect schools, including:

- Western Australian Climate Policy
- Waste Avoidance and Resource Recovery Strategy 2030
- Waterwise Perth two year action plan
- Western Australia's Plan for Plastics, and Reducing the use of disposable plastic – Premier's Circular 2021/13.

3.2 Some of these are discussed elsewhere this report. This chapter focusses on how climate change is embedded in the Department of Education's own policies and frameworks.

The Department of Education's role in facilitating schools to respond to climate change

3.3 For some time now, increasing school autonomy has been a significant aspect of the Department of Education's long-term vision and strategic direction for public schools in Western Australia. This aims to shift more decisions to the local level and to empower principals and their staff to act with greater authority and responsibility for the success of their school.[88] The main vehicle for this has been the Independent Public Schools initiative and its single line budgeting, which gives schools increased flexibilities and responsibilities to make local decisions across a range of school operations.[89] Similarly, Catholic schools in Western Australia describe themselves as having a system of 'connected autonomy', where principals lead their schools 'with empathy for context'.[90]

3.4 Climate change is an issue that requires a systemic response, which is a challenge for decentralised systems, including education.[91] Evidence to the inquiry was clear that the majority of current climate action in schools is led by individual 'champions' at the local level. However, research has shown that systemic change is only achievable with 'top-down' direction and communication about the importance of embedding sustainability in schools.[92] Therefore, the Department's role in facilitating climate action in schools must be one of

88 Department of Education, *Building on strength: Future directions for the Western Australian public school system*, East Perth, 2019, p. 8.
89 Department of Education, *Independent Public Schools*, accessed 15 March 2022, <https://www.education.wa.edu.au/>.
90 Mr Wayne Bull, Catholic Education Western Australia, *Transcript of Evidence*, 18 February 2022, p. 2.
91 Submission 52, Australian Association for Environmental Education, p. 30.
92 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, pp. 47, 92.

leadership. Practically, this means setting clear expectations and objectives in frameworks and policies, and providing expertise and support to achieve them.

Finding 2

Frameworks are the main way in which the Department of Education communicates its expectations and priorities to schools.

Frameworks

Two frameworks form the Department's guidance to WA schools on sustainability and responding to climate change: *Sustainable Schools WA* and *Caring for Country Together.*

Sustainable Schools WA initiative

3.5 Sustainable Schools WA (SSWA) is a whole-school planning framework for Education for Sustainability (EfS) that was developed in 2005 'by schools, for schools' in conjunction with a broad range of organisations that support schools with teaching and learning in this area. It was aligned with the Australian Sustainable Schools Initiative (AuSSI), which was a federal government policy focus in the early 2000s, aiming to build systemic change by integrating EfS through a whole-school approach. Commonwealth support for AuSSI was withdrawn in 2010.[93] More than half of WA public schools participate in SSWA, as well as a sizeable portion of independent schools (36%) and Catholic schools (32%).[94]

3.6 SSWA assists schools to broaden their EfS activity in support of a 'culture of sustainability' becoming established within school communities. By using the 'ecological footprint' and 'social handprint' tools (see Figure 3.1), and the key elements rubrics, schools can assess and monitor their progress in embedding sustainability across the whole school. The initiative supports:

- curriculum development/implementation (both the Western Australian curriculum and the Australian Curriculum cross-curriculum priority of sustainability)
- meaningful, action-based learning tasks for students and teachers
- access to a range of resources and an expanding support network
- opportunities to save money through effective resource management
- promotion of schools' EfS activities
- community partnerships
- professional learning and networking opportunities.[95]

93 Larraine Larri and Angela Colliver, 'Moving Green to Mainstream: Schools as Models of Sustainability for Their Communities – the Australian Sustainable Schools Initiative (AuSSI)', in Annette Gough et al. (eds), *Green Schools Globally*, Springer Nature, Switzerland, 2020, pp. 61, 70.

94 Department of Education, *Sustainable Schools WA: Participating Schools*, 2 December 2021, accessed 21 March 2022, <http://det.wa.edu.au>.

95 Department of Education, *Sustainable Schools WA: About the Initiative*, 24 May 2021, accessed 18 March 2022, <http://det.wa.edu.au>.

Figure 3.1: SSWA ecological footprint and social handprint (Department of Education)

SSWA is a highly regarded, best practice sustainability education initiative

3.7 SSWA has been described as a 'shining light in best practice sustainability education.'[96] Evidence showed that it has many strengths and is well-regarded because it is:

- **Locally owned –** SSWA was co-developed by a broad collective of sustainability practitioners and educators. This continues in the form of the Sustainable Schools Alliance, whose members provide significant resource and program support to schools.[97]
- **Flexible –** The SSWA framework guides schools to embed sustainability across the whole school, but they can develop locally relevant sustainability action plans based on what they identify as the 'big issues' in their community.[98] This is entirely appropriate – how a school in a remote Aboriginal community sees fit to implement the framework will be completely different to how a large metropolitan high school will approach the same task.

> ***I think we have the bones of an extraordinary framework... [SSWA] is a model that is well worth investing in, because it was designed by the people of Western Australia for Western Australia; it was not taking someone else's ideas and trying to fit them over the top.***
>
> *- Catrina Luz Aniere, Millennium Kids*

- **Holistic –** The 'ecological footprint' and 'social handprint' tools reflect the 'systems thinking' approach that is fundamental to addressing a complex problem such as climate

96 Submission 24, Millennium Kids, p. 3.
97 Department of Education, *Education for sustainability partners*, accessed 21 March 2022, <https://myresources.education.wa.edu.au/>.
98 Submission 52, Australian Association for Environmental Education, p.26; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 3.

change. This interconnected view of sustainability creates more opportunities for engagement within schools and in the broader community.[99]

- **Process-driven –** The SSWA framework acknowledges that schools will be on a continuum. When schools evaluate their activities and progress using the key elements rubrics, they discuss their goals, make linkages, share ideas and collectively solve problems. This collaborative and deliberative process reflects the kind of learning that teachers aim to facilitate with their students.[100]

3.8 Research has found that the whole-school approach adopted by AuSSI and SSWA is both educationally sound and ecologically effective.[101] When implemented with leadership support and professional development, the SSWA initiative was found to have positive outcomes for students and teachers.[102] Further conclusions of this research, including the enablers and barriers to effective sustainability education and responses to climate change, have informed other findings and recommendations in this report.

Finding 3

The Sustainable Schools WA initiative reflects best practice sustainability education, offers many benefits to participating schools and is highly regarded amongst Western Australian sustainability educators and practitioners.

The value of SSWA has not been reflected in its funding or priority

3.9 When the SSWA initiative was created, it sent a clear message to educators that sustainability was on the agenda and a vital part of the curriculum.[103] Yet despite its benefits and widespread support amongst sustainability educators and practitioners, resourcing and policy priority have declined over time.[104] Until recently, the initiative was managed by only one staff member with other responsibilities, which has limited the ability to fully engage with schools and sustainability partners.[105] Website resources became outdated.

3.10 Some work is now underway within the Department of Education to raise awareness of the benefits of SSWA and increase school participation.[106] During the preparation of this report, website materials have been transitioned to the Department's new web presence, which has

99 Submission 52, Australian Association for Environmental Education, p.27; Dr Jennifer Pearson, Australian Association of Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 15; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 9.

100 Submission 52, Australian Association for Environmental Education, p.27; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 5.

101 Larraine Larri and Angela Colliver, 'Moving Green to Mainstream: Schools as Models of Sustainability for Their Communities – the Australian Sustainable Schools Initiative (AuSSI)', in Annette Gough et al. (eds), *Green Schools Globally*, Springer Nature, Switzerland, 2020, p. 80.

102 Elaine Lewis, 'Impact of education for sustainability at a Montessori primary school: from silos to systems thinking', School of Education Doctoral Thesis, Murdoch University, Perth, 2012, p. 217, <http://researchrepository.murdoch.edu.au/12034/>.

103 Submission 24, Millennium Kids, p. 3.

104 Submission 40, Dr Catherine Baudains, p. 12; Submission 52, Australian Association for Environmental Education, p.27; Submission 55, Angela Rossen, p. 5.

105 Dr Jennifer Pearson, Australian Association of Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 13; Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 4.

106 Submission 61, Department of Education, p. 5.

streamlined access, and updated content has been added.[107] This is a good start, and may go some way to communicating to schools that sustainability should be a focus area. However, sustained increased funding – including professional development and support for school networks – is required for SSWA to realise its full potential to support sustainability outcomes in schools.

3.11 The Department of Education used to offer 'Making the Connections' professional development workshops for school new to SSWA. This has been replaced by Cross-Curriculum Priorities workshops run by Cape Naturaliste College, which is a Teacher Development School. COVID-19 has limited the ability to offer these workshops, which has only run once since 2021 – however, the intention is to offer one each term.[108] These workshops feature SSWA but the name suggests this is not their sole focus.

3.12 School support networks are also highly valued as a way to share ideas and develop meaningful strategies and projects.[109] They are also important for teacher wellbeing, as networks demonstrate the collaborative power and value of the work being done.[110] The Department of Education's district offices used to be involved in coordinating professional development opportunities and networks, but this has been transferred to regional offices who are overstretched.[111] Coordinating SSWA networks has now fallen to teachers or Sustainable Schools Alliance members, who do this work in their own time. Networks are more effective and have longevity when they are run systemically, with sufficient funding to allow relief coverage for participating staff.[112]

> ***There is excellent practice out there. There are great teachers and great initiatives, and they are inspiring. If we can promote those, then it will give a sense of optimism.***
>
> *- Geoffrey Holt, State School Teachers' Union of Western Australia*

Finding 4

The impact of the Sustainable Schools WA initiative has been limited by lack of funding and system support.

Recommendation 2

That the Minister for Education and Training ensures that funding is given to support schools to adopt the Sustainable Schools WA initiative as a whole-school planning framework for sustainability and responding to climate change. This should include professional development on implementing the framework and funding support for networks.

107 Mr Martin Clery, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 14.
108 Submission 61B, Department of Education, p. 7.
109 Submission 33, Dr Brad Gobby, Dr Jane Mereweather and Dr George Variyan, p. 4.
110 Dr Vanessa Rauland & Ms Kathy Anketell, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 5.
111 Mr Geoffrey Holt, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 14.
112 Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 9.

Caring for Country Together sustainability framework

3.13 The Department's new sustainability framework, *Caring for Country Together,* was launched part-way through this inquiry, in November 2021. It is designed to unify current sustainability efforts, create momentum for change and define a shared narrative for sustainability across the organisation.[113] It defines three focus areas based on the key activities of the Department:

- **Curriculum** – includes student learning outcomes, classroom supports, whole-of-school approaches to sustainability, and system-wide support for teachers and schools to integrate sustainability into curriculum and classroom practice.
- **Infrastructure** – includes thoughtful planning, design and building of sustainable infrastructure, as well as the commissioning of services that offer sustainable choices over cheaper, less sustainable options.
- **Operations** – includes the use of sustainable methods and management practices to support day-to-day water and energy consumption, disposal of waste, grounds maintenance and preservation of the surrounding environment.

3.14 A roadmap forms part of the framework to guide actions for schools to:

- Assess the sustainability initiatives they may currently be undertaking
- Reflect and understand where they are on their sustainability continuum
- Identify what they need to do next to reduce their environmental impact and costs and improve methods for better energy efficiency.[114]

3.15 The Department has established a sustainability unit of four to five staff to drive implementation of the framework, coordinate actions across the agency and work with the executive on strategic directions.[115]

The Department has increased and dedicated resources to sustainability

3.16 We received evidence that the Department's consultation on the framework was largely internal and key external stakeholders were not consulted or only consulted indirectly and at a late stage.[116] Experienced sustainability educators were disappointed that the development of the framework did not reflect the collaborative approach that is central to addressing climate change.[117]

3.17 Despite this, the framework and establishment of the Department's sustainability unit have been met with excitement from many partner organisations.[118] The dedicated sustainability

113 Submission 61, Department of Education, p. 1.
114 Submission 61, Department of Education, p. 2.
115 Mr William Carroll, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 3.
116 Dr Jennifer Pearson, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 8; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 3; Ms Jennifer Blair, Western Australian Council of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 5; Ms Kathy Anketell, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 4.
117 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 3.
118 Mr Damien Postma, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 6; Mr Aaron Compton, Waste Authority, *Transcript of Evidence*, 18 February 2022, p. 6; Dr Vanessa Rauland,

unit with increased staffing levels is a sign of the Department's commitment to the framework. However, it has only been initially funded for two years and is staffed by seconded and contract staff.[119] In our view, there is a clear need for a sustainability unit to be established permanently to oversee the response of WA schools to climate change well into the future.

Finding 5

The establishment of a dedicated sustainability unit within the Department of Education is a promising sign of the Department's commitment to implementing its sustainability framework.

Recommendation 3

That the Minister for Education and Training commits to funding the Department's sustainability unit beyond its initial two years.

Student voices will inform priorities for education

3.18 It is also encouraging that the framework acknowledges many of the factors regarding the importance of sustainability action in schools, as discussed in Chapter 1 of this report – in particular, the need to address student concerns over climate change.[120] The WA Student Council, to be formed in Term 2 this year, will further represent school students in offering views to the Minister on priorities for the education system. It is anticipated that responding to climate change will be 'at the top of their list.'[121]

Finding 6

The Department has acknowledged student concerns over climate change, and expects that the new WA Student Council will reiterate students' views that responding to climate change should be a priority within the education system.

The framework will benefit from further detail

3.19 Evidence regarding the content of the framework was mixed. Some described it as 'vague'[122], whereas the Department says it is a 'starting point for continuous reflection and improvement'.[123] The framework is intended to allow schools to see themselves within a continuum and identify where they are and what their next steps might be.[124] The

ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 3; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 2.

119 Submission 61B, Department of Education, p. 6.

120 Department of Education, *Caring for Country Together – Our sustainability framework*, East Perth, 2021, p. 2.

121 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 14.

122 Dr Rachel Sheffield, Australian Association of Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 9; Mr Geoffrey Holt, State Schools Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 3.

123 Department of Education, *Caring for Country Together – Our sustainability framework*, East Perth, 2021, p. 2.

124 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 4.

Department plans to include examples and case studies of whole-school approaches to sustainability. However, it was mindful that the roadmap should not be too prescriptive because actions will need to be specific to the local context of schools.[125] In this way, the roadmap has a similar format to the Key Elements Rubrics that are part of the Sustainable Schools WA toolkit, which are established tools to review where a school is on the 'journey to embedding sustainability within its culture.'[126] The rubrics are more specific and are linked to sample sustainability action plans with practical goals. We expect that the Department will develop the roadmap to include similar levels of detail.

Finding 7

The sustainability framework and roadmap are a good starting point for schools to assess their sustainability activity, and the addition of further detail and examples will improve their practical value.

Finding 8

The Sustainable Schools WA Key Elements Rubrics are a sound model for further developing the Department's sustainability framework.

Transport has been overlooked as a pillar of school sustainability

3.20 The framework is holistic in guiding schools to consider the environmental, social/cultural and economic aspects of their sustainability strategies and initiatives, and privileging Aboriginal knowledge and perspectives. However, one notable exception to this omitting transport from the 'operations' focus area, which otherwise prompts schools to consider their actions in relation to the natural environment, water, energy, waste and maintenance.

3.21 The Department's explanation is that 'transport is a better fit across all three pillars – curriculum, infrastructure and operations.'[127] In our view, this is a significant missed opportunity. Specifying transport as an operational focus area would encourage schools to properly resource and support efforts in increasing active transport to school.[128] Addressing the decline in active travel to school is a key focus area for the Department of Transport, and their work with the Department of Education in this area is discussed further in Chapter 5. Excluding transport from the school sustainability framework weakens these efforts and is unnecessarily 'siloed'.

Finding 9

Omitting transport as an operational focus area in the Department's sustainability framework is a missed opportunity for schools to contribute to transport and climate change outcomes.

125 Mrs Louise O'Donovan, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 24.
126 Department of Education, *Sustainable Schools WA Toolkit: Review, Plan and Celebrate*, 27 July 2016, accessed 17 March 2022, <http://det.wa.edu.au/>.
127 Submission 61B, Department of Education, p. 12.
128 Ms Helen Ginbey, Department of Transport, *Transcript of Evidence*, 18 February 2022, p. 8.

Recommendation 4

That the Minister for Education and Training ensures that transport is included as an operational focus area in future revisions of the Department of Education's sustainability framework.

Follow-up work is needed to secure sustainability as a priority

3.22 Ultimately, the effectiveness of the sustainability framework will be determined by its coordination, communication and implementation. Given the recent release of the framework, this is still in its early stages. The sustainability unit will be supported by a group of leaders who have been briefed on the framework, including regional directors of education, principals embedded within the finance division of the Department and 16 collegiate principals.[129] Schools can request support to implement the framework and the Department has also developed metrics to indicate which schools need priority support to reduce their energy and water consumption.[130]

3.23 The Department also intends to 'structurally encompass sustainability as a standard reporting item' and has set up a reference group of senior staff from across the agency to report bimonthly on progress in their divisions.[131] We were pleased to see that membership of this group shows broad representation across curriculum, infrastructure and operations.[132]

3.24 Sustainability has been included in the Director General's *Focus* 2022 document, which sends a 'strong signal' to principals to prioritise it in their school's strategic planning.[133] We note that the commitment to 'provide advice and tools to improve sustainability practices' is a single dot point in a six-page document.[134] The Director General intends sustainability to be an ongoing inclusion in this annual document, and we hope that it features more prominently in future editions.

3.25 The success of the framework will also depend on the traction it gains amongst school staff. Based on the rollout of previous Departmental frameworks, such as the Aboriginal Cultural Standards Framework, there are concerns that implementation will be haphazard or tokenistic as school staff are not given any time to 'unpack' the framework and understand how it applies to them.[135] Staged, comprehensive professional development for school staff on the intentions and requirements of the framework – something beyond an online learning module, or 'tick-a-box' exercise – will be crucial to ensuring its successful

129 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 4, 8; Mr Jay Peckitt, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 8.
130 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 8; Submission 61B, Department of Education, p. 2.
131 Mr William Carroll, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 4.
132 Submission 61B, Department of Education, p. 1.
133 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 4, 23.
134 Department of Education, *Focus 2022*, East Perth, 2021, p. 3.
135 Submission 52, Australian Association for Environmental Education, p. 27.

implementation and longevity.[136] Without this, it will merely be a statement of good intentions.

Recommendation 5

That the Minister for Education and Training ensures that the rollout of the sustainability framework is supported by clear and ongoing communication to schools about its priority, and comprehensive professional development for school staff.

The question of a mandate

3.26 The Department of Education's frameworks for sustainability and climate action are in place, but the question remains: how will it ensure that schools implement it? *Caring for Country Together* states the Department's expectation that sustainability will be central to schools, regional and central services in everything they do, but the mere existence of the framework will not be enough to ensure action. Even with strong communication of this expectation and support from the Department, sustainability educators and practitioners were very clear in their view that unless climate action in schools is mandated, it will continue to be displaced by competing priorities. This is not necessarily from a lack of will – we have no doubt there are schools who want to take stronger climate action but experience barriers to doing so, including:

- Workload issues and curriculum overcrowding[137]
- Dominance of reportable and assessable metrics, such as literacy and numeracy[138]
- Lack of school leadership support[139]
- Reliance on individual 'champions' whose efforts fall away when they leave the school[140]
- Lack of understanding of the benefits of sustainability education and climate action in schools[141]
- Reluctant attitudes towards acknowledging and addressing climate change, based in personal belief or perceived political risk[142]

136 Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 2.

137 Dr Rachel Sheffield, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 5; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 2; Mrs Alex Ellis, Environment House, *Transcript of Evidence*, 18 February 2022, p. 4.

138 Submission 52, Australian Association for Environmental Education, p. 33.

139 Mrs Anne Fairbanks, Western Australian Association of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 2; Ms Kathy Anketell, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 8.

140 Mrs Anne Fairbanks, Western Australian Association of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 2.

141 Mrs Anne Fairbanks, Western Australian Association of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 2.

142 Submission 22, SDG Target 4.7 & Teachers for a Clean State Network, p. 17; Submission 55, Angela Rossen, p. 2.

- Lack of understanding around how to embed sustainability and climate change in teaching.[143]

Faced with these barriers, it is only natural that schools are pragmatic and focus their limited resources on priorities that they are directly accountable for.

3.27 The Department of Education has stated very clearly that it has no intention to impose a mandate for schools to 'deliver on' sustainability. Schools are 'strongly encouraged' to implement the Department's frameworks but imposing mandates around them 'is not our approach in this state.'[144] Rather, the Department's position is that school principals are best placed to make decisions that are responsive to the needs of their community and school, and that internal and external expectations will drive implementation of the sustainability framework:

> I would be very surprised if there was not feedback to those principals in regard to the need to do this. If it was not from their community, I imagine it would be from their students. But at the system level, this is something that is a priority for us, and across the system we will be pushing this as a priority. So it is not mandated. There is no intention at this point to mandate it, but it would be an expectation that principals start to turn their mind to this.[145]

It is possible to balance a central mandate with school independence

3.28 Implicit in this explanation from the Department is an assumption that a mandate would restrict principals in their independent ability to make decisions that are relevant to their school's local context. We do not believe this would necessarily be the case – it would depend on the form of the mandate. Suggestions on this include requirements that schools create a sustainability committee and policy, create a dedicated role for a sustainability officer, include emissions targets in their business and operational plans and obligatory professional development for staff.[146] If the mandate was a catalyst for schools to implement these mechanisms, there would still be scope for principals to decide on the specific content depending on their local context and position on the sustainability continuum. We do not dispute that there are benefits to schools identifying their own priorities and they are likely to experience better engagement in their nominated actions where there is a level of local ownership.[147]

Finding 10

There is scope for the Department of Education to create a stronger mandate on climate action that does not restrict the independence of individual principals and schools.

143 Dr Jennifer Pearson, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 7.
144 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 7, 23.
145 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 5.
146 Submission 52, Australian Association for Environmental Education, p. 4.
147 Ms Jennifer Blair, Western Australian Association of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 8.

3.29 The Department stated that the existing mandate that schools must deliver the Western Australian curriculum will form the basis of schools' response to climate change.[148] The limitations of this are:

- Curriculum is just one focus area of the three contained within the framework – while climate change education may involve action-based teaching and learning, it cannot drive systemic reform in the areas of school infrastructure and operations[149], and
- Sustainability as a curriculum concept is fragmented, poorly understood and often overlooked, making it a weak policy imperative for climate action.[150]

3.30 The challenges for the curriculum in addressing climate change are further discussed in Chapter 6.

3.31 Relying on a curriculum mandate for climate action in schools effectively represents the *status quo*, which witnesses to the inquiry told us has already been shown to be inadequate to guarantee action by itself. The Department has said it will use other 'levers' to encourage schools to engage with its sustainability framework, such as increased support and resources, communication and targeted projects. We would encourage the Department to use other 'levers' that are discussed throughout this report.

3.32 Given that the Department is still early in its implementation of the framework, it is not yet possible to tell if its efforts will be enough to overcome the many barriers to climate action listed above. Going forward, the Department should review its strategy regarding implementation of the framework to gauge how effective it has been.

Recommendation 6

That the Minister for Education and Training directs the Department of Education to annually review engagement with the *Caring for Country Together* framework, with specific reference to climate action, both at school level and within the central and regional offices of the Department.

Without a mandate, schools will need to be incentivised to take action

3.33 In the absence of a broader mandate, witnesses to the inquiry supported a system of offering financial or resource incentives for schools to take climate action.[151] We agree that this would prompt schools to engage with the Department's frameworks and stated priorities, and galvanise support amongst parents and school communities.[152]

3.34 Incentives to schools could take various forms - grants, awards, loans or seed funding – and would need to be linked to demonstrated progress, either as a prerequisite or an acquittal. Current departmental projects around school infrastructure upgrades impose very few conditions on participating schools, if any. While the basic benefits of these projects need

148 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 5.
149 Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 4.
150 Submission 52, Australian Association for Environmental Education, p. 32.
151 Submission 33, Dr Brad Gobby, Dr Jane Mereweather & Dr George Variyan, p. 3.
152 Dr Rachel Sheffield, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 5.

little justification, there are concerns that the approach is short-sighted in overly relying on technology to solve problems rather than behaviour change.[153]

3.35 An incentive system would also require a form of metric or mapping system for evaluating schools' progress and goals. It would make sense for this to be linked to the roadmap in the sustainability framework but, as discussed above, that tool is not yet sufficiently detailed or mature to incorporate this. Benchmarking around resource usage and emissions could quite easily be integrated into the sustainability framework. This is further discussed in Chapter 5.

3.36 However, the overall 'embedded-ness' of sustainability in a whole-school approach is more difficult to measure, particularly when taking into account the unique local context of each school. Given the support for incentives amongst stakeholders in this inquiry, the Department would benefit from further consultation in developing any incentives system. This could be done through the Sustainable Schools Alliance.

Finding 11

Resource and financial incentives for schools will prompt schools to engage with the Department's sustainability framework.

Recommendation 7

That the Minister for Education and Training directs the Department to consult with the Sustainable Schools Alliance and develop a system of incentives for sustainability initiatives in schools.

Schools must also prepare to adapt to climate change

3.37 One of the key outcomes of the Climate Health WA Inquiry was the development of terms of reference for both a climate change vulnerability assessment and climate change adaptation plan for the health sector. The education sector should be similarly preparing itself.

3.38 The Western Australian Climate Policy acknowledges that 'greater focus is needed to identify climate impacts for different regions, to communicate adaptation options and to promote resilience.'[154] This reflects the evidence to the inquiry, which showed that much of the focus to date on the response of WA schools to climate change has been on mitigation. We received very little evidence about the Department's strategy to adapt to climate change and the threats it poses to the education sector.

3.39 Adaptation planning should be holistic. It should consider the impacts on the wider communities in which schools exist, and focus not just on school assets but on the services schools provide. Adaptation planning for the education sector should be complemented by broader planning to reduce non-climatic vulnerabilities, such as poverty.[155]

153 Ms Kathy Anketell, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 13.
154 Government of Western Australia, *Western Australian Climate Policy*, November 2020, p. 11.
155 Submission 39, Education Sector Adaptation to Climate Change, p. 1.

3.40 One aspect of this should be greater integration of disaster risk knowledge and resilience into formal education, in the context of an overarching strategy. This is recognised as a priority in the National Disaster Risk Reduction Framework.[156]

3.41 The Victorian Department of Education and Training very recently released its Climate Change Adaptation Action Plan 2022-2026, which forms part of a larger iterative process by the Victorian Government to address the current and projected impacts of climate change. As the first in a series of plans, it is 'foundational and exploratory', but also recognises that the education system is fundamental to promoting innovation, embedding awareness and building resilience, particularly in younger generations.[157]

Recommendation 8

That the Minister for Education and Training implements a sector-wide climate change impacts and adaptation study, ideally as part of a statewide process to address the current and projected impacts of climate change.

156 Submission 52, Australian Association for Environmental Education, p. 12.

157 Department of Education and Training, *Education and Training Climate Change Adaptation Action Plan 2022-2026*, Melbourne, 2022, p. 6.

Chapter 4

Actions at school level

4.1 As discussed in Chapter 3, the Department of Education's sustainability frameworks encourage schools to incorporate their existing sustainability work into a whole-school approach. A whole-school approach is widely considered to be the most effective and durable model to embed climate action in schools across all disciplines, over and above piecemeal implementation by individual teachers.[158] This is where sustainability is embedded throughout the school curriculum, operations and management, and is embraced by all staff (see Box 4.1).

4.2 The evidence to the inquiry was very consistent on the features and actions at school level that enable a whole-school approach to sustainability. This chapter examines how those factors are supported in Western Australian schools.

Box 4.1: What does a whole-school approach look like?[159]

1. EfS is integrated into all or most subjects through:
    - the use of resources that have a sustainability context e.g. Maths examples, English comprehension and reading materials, foreign language development topics
    - sustainability investigations aligned to curriculum e.g. Science, Geography, Economics, Ancient History, Indigenous perspectives etc.
    - problem-based learning to cover big ideas e.g. projects, debates, specific events — at classroom, year or school level.
2. EfS engagement is evidenced physically in the school through:
    - active involvement of the school community in EfS related activities e.g. recycling, vegetable gardens, water and energy conservation programs, student extra-curricular activities etc.
    - active links of the school community to the wider community in an EfS context e.g. school-community committee, involvement with place-based learning, support of local and worldwide sustainability programs.

From other studies and findings, a whole-school approach also has the following features:

- most teachers engaged in teaching EfS in the classroom and accessing school-based EfS projects/initiatives
- teachers accessing continual and staged PD in EfS
- support from the Principal › staff with dedicated roles and responsibilities for EfS
- student engagement with EfS through curriculum and/or whole-of-school EfS projects
- regular planning for EfS (both strategic and succession)

158 Natalie Gibb, *Getting Climate Ready: A guide for schools on climate action,* United Nations Educational, Scientific and Cultural Organization, Paris, p. 6; Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 21.

159 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 118.

- constant re-evaluation of the level of engagement of both internal and external communities
- evaluative measures of accountability e.g. for EfS projects
- ongoing commitment to the philosophy of EfS through incorporation of EfS as a goal in the school's management plan (not just in the school's environmental management plan).

Case study: Coolbinia Primary School

Coolbinia Primary School is a leader in implementing a whole-school approach to sustainability. All three cross-curriculum priorities are embedded in classroom learning and initiatives throughout the school, especially in the STEM program, led by a dedicated cross-curricular coordinator. Links to the Australian Curriculum and UN Sustainable Goals are explicit. Sustainability features in the school business plan, and an annual sustainability action plan is developed each year through a whole staff review process. The school has fostered numerous partnerships and enjoys a strong relationship with its local community, including Aboriginal elders and artists. Activities and achievements are promoted through regular communications which celebrate achievement and build support.

Adjacent bushland provides an ideal 'outdoor classroom' for students to engage in two-way science learning and a rich program of project-based learning. Many of the projects are driven by student ideas and concerns – for example, bobtail lizards threatened by traffic on the surrounding streets.

The school has executed a series of carbon reduction plans, starting with a goal of 10 tonnes and progressing to 200 tonnes. Year-level groups focussed on different areas of the school operations. The school also engaged the wider community through activities such a recycling coffee grounds from the local coffee shop, fundraising for solar lanterns in Uganda and India, and donations of tree seedlings from a local bushcare group. An environmental accountant confirmed the results of the plans.

All staff engage in annual planning and assessment using the SSWA rubrics. They map emerging and established sustainability activities, strengths and weaknesses, and vote on priorities for the year ahead.

Source: Site visit, 20 October 2021; Coolbinia Primary School, *Cross Curriculum Priorities,* accessed 6 May 2022, <https://coolbiniaps.wa.edu.au/>, Australian Education for Sustainability Alliance, *Thinking Globally, acting locally*, accessed 6 May 2022, <http://www.sustainabilityinschools.edu.au/>.

School leaders are uniquely positioned to have an impact

4.3 Departmental leadership is certainly important in communicating to schools that sustainability is a priority, and supporting schools to take action. However, school leaders – principals, staff and school boards – will have the most direct impact on students. They are uniquely positioned to foster new levels of support for climate solutions and can help by becoming climate-literate and vocal, model leaders within their communities.[160] As has been demonstrated through the COVID-19 pandemic, school leaders can model to students how to respond to emergencies with positivity and compassion, and 'how adults don't have it all sussed out but that we can be calm, rational and caring during such uncertain times.'[161]

160 New Zealand Council for Educational Research, *Leadership and school-wide climate responses*, Research Briefing 2, May 2021, p. 1.

161 New Zealand Council for Educational Research, *Leadership and school-wide climate responses*, Research Briefing 2, May 2021, p. 2.

Principal support is crucial to success

4.4 It is unsurprising that school principals have the greatest influence in whether a school is engaged with sustainability and climate action, and the longevity of this engagement. The principal develops the character of a school by determining priorities and focus at a local level, and balancing this with Departmental requirements and the demands of the local internal community.[162]

4.5 A supportive principal can facilitate enablers and overcome barriers for a whole-school approach, and lead teachers and the school community to embrace a whole-school approach to sustainability and climate action. A disinterested or resistant principal can do the opposite.[163] We heard evidence of both the devastating effects that unsupportive principals have had on well-established sustainability actions in schools, as well as examples of the positive and transformative changes that have occurred with enthusiastic principal support.[164] The impact of principal leadership was also evident in the school site visits that the committee did to Coolbinia Primary School, Baldivis Secondary College and Bob Hawke College.

4.6 The Committee invited the peak representative bodies for school principals in Western Australia to make submission to the inquiry; disappointingly, we did not receive any direct response.[165] However, research shows an important factor in leading an effective whole-school approach is that the principal communicates to their staff that it is a benefit, not a burden. Where principals encountered initial resistance from teachers, this quickly turned to support though positive encouragement and direction.[166]

4.7 Implicit in this finding is an assumption that principals first understand what a whole-school approach is and how to implement it, and appreciate the benefits it offers to their school. Evidence to the inquiry suggests that there is still plenty of work to be done in fostering this understanding and appreciation in school principals. As discussed in Chapter Three, this will require the Department to clearly and continually communicate to principals that sustainability needs to be prioritised, and provide them with support to lead the implementation of the sustainability framework.

Finding 12

Support from school principals is essential to school engagement with climate action.

162 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 99.

163 Submission 52, Australian Association for Environmental Education, p. 38.

164 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 11; Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 8; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence,* p. 7; Submission 52, Australian Association for Environmental Education, p. 25.

165 The 2021 President of the Western Australian Primary Principals' Association, Ian Anderson, was listed as a contributing author of Submission 52 from the Australian Association for Environmental Education.

166 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 99.

Finding 13

There is significant scope for the Department of Education to increase understanding and appreciation amongst school principals of the benefits of a whole-school approach to sustainability.

An accountability measure for sustainability will encourage compliance

4.8 Given the pivotal role that principals play in schools engaging with sustainability and climate action, introducing a measure of accountability would further communicate that this is an area for priority and encourage compliance. There is already a requirement in the Principals' Statement of Expectations that principals comply with departmental policies and initiatives. However, explicitly including sustainability in the Department's other accountability documents and procedures would take this further. This could include the Principals' Professional Review, the Independent Public Schools Delivery and Performance Agreement, and the Public School Review.

Recommendation 9

That the Minister for Education and Training incorporates explicit reference to sustainability into school accountability documents and procedures, including the Principals' Professional Review, the Independent Public Schools Delivery and Performance Agreement, and the Public School Review.

Climate action usually falls to volunteer 'champions'

4.9 Evidence to the inquiry was overwhelming on this point: having a staff member with FTE allocation for coordinating sustainability and climate action is key to success in implementing a whole-school approach. To date, most schools have relied on passionate 'champions' – either teachers or parents – to coordinate sustainability activity on a voluntary basis. However, in the long term this is never going to lead to the wider systemic change that is necessary to embed sustainability in schools.[167] This is because:

- effective school responses to climate change must be a responsibility shared among staff, students, communities and at the system level – this requires coordination[168]
- people's time is valuable – failing to dedicate human resources to sustainability activity and climate action reflects an attitude that the work is not valued.[169] Activities such as applying for grants are time-consuming. Teachers who volunteer their time to coordinate sustainability programs often feel they are missing out on other professional opportunities.[170]
- continuity is difficult – individual champions eventually burn out or move on[171]

167 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 47.
168 Submission 33, Dr Brad Gobby, Dr Jane Mereweather & Dr George Variyan, p. 2.
169 Submission 2, Anonymous, p. 3; Submission 55, Angela Rossen, p. 4.
170 Ms Rosemary Lynch, Environment House, *Transcript of Evidence*, 18 February 2022, p. 7.
171 Submission 26, Kathy Anketell, p. 1; Submission 37, Tim Hill, p. 9; Ms Jennifer Blair, Western Australian Council of State School Organisations, *Transcript of Evidence*, 22 November 2021, p. 6; Mrs Alex Ellis, Environment House, *Transcript of Evidence*, 18 February 2022, p. 4.

- existing workload is high and voluntary activity is easily sacrificed to competing priorities[172]
- passionate volunteers often have a high degree of knowledge, but not always – effective action needs training and expertise.[173]

Finding 14

Schools mostly rely on passionate 'champions' to coordinate sustainability actions in their own time. This is unsustainable.

A dedicated coordinator role supports climate action and drives progress

4.10 Having a paid sustainability coordinator overcomes these challenges and has the potential to make significant achievements in a timely and cost-effective manner. The role can provide whole-school support for both the educational and infrastructure/operational aspects of climate action, and make links between the two areas.[174]

4.11 Educationally, a sustainability coordinator supports a shift to systems thinking, which is an essential part of responding effectively to climate change. They assist staff to make connections across the curriculum and identify further opportunities to embed sustainability in existing classroom programs.[175] Their work is not intended to create additional work for teachers but to enhance work that is already being done. A recent Grattan Institute study supports the idea that specialist staff in schools could be better utilised to help teachers focus on high-quality classroom instruction.[176]

> ***There is a lot of willingness in schools to do things, but not enough time to have the follow-through.***
>
> *- Kathy Anketell, ClimateClever*

4.12 In relation to school infrastructure and operations, a sustainability coordinator can ensure that the benefits in these areas are maximised. We heard evidence that even where schools have invested in infrastructure to reduce their carbon footprint, this often deteriorates when nobody is responsible for monitoring and maintaining it.[177] Wastage often goes undetected.[178] A sustainability coordinator can take responsibility for this, as well as gathering data to measure progress and identifying areas for behaviour change. The combined outcomes of a sustainability coordinator's work in this area has been shown to have the capacity to pay for itself in utility savings.[179]

172 Submission 15, Stephen Murray, p. 3; Mr Geoffrey Holt, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 7.
173 Submission 28, Environment House, p. 1; Submission 30, Eastern Regional Metropolitan Council, p. 2, Mr Alan Benn, Environment House, *Transcript of Evidence*, 18 February 2022, p. 7.
174 Submission 11, Waste Authority, p. 4.
175 Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 9.
176 Jordana Hunter, Julie Sonnemann and Rebecca Joiner, *Making time for great teaching: How better government policy can help*, Grattan Institute, Melbourne, 2022, p. 4.
177 Mr Alan Benn, Environment House, *Transcript of Evidence*, 18 February 2022, p. 5.
178 Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 4.
179 Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 8.

Finding 15

Dedicated sustainability coordinators in schools achieve real benefits in responding effectively to climate change.

Funding dedicated sustainability coordinators in schools will demonstrate commitment to climate action

4.13 The Department of Education has no visibility on the FTE allocation to sustainability across the system.[180] It says that schools have the flexibility to fund FTE allocations for sustainability coordination themselves, within the student-centred funding model and their one-line budget.[181] It relies on its stated intention to 'push' sustainability as a priority across the system as sufficient to prompt schools to allocate funds from their existing budgets towards sustainability activity and coordination.[182]

4.14 Once again, this simply represents the *status quo*. Similarly to the issue of a climate action mandate for schools, evidence to the inquiry was clear that without additional funding, schools will not prioritise resources from their existing budgets towards sustainability. This is because they are unaware of the benefits that a dedicated sustainability coordinator can offer, and other competing priorities within schools.[183]

4.15 Given the strength of evidence around the importance of dedicating resources to sustainability coordination in schools, and the demonstrated benefits of this role, we think that additional funding for FTE allocations is warranted. Additional funding from the Department of Education for sustainability coordination in schools will show commitment to this work, and reflect its value. It is a matter for the Department how to achieve this through the current funding model. However, there may be some scope to include it as a Targeted Initiative.[184]

4.16 Witnesses to the inquiry made various recommendations regarding the appropriate FTE allocation for this role, varying from 0.2 to 0.5FTE.[185] Most agreed that a part-time role would be enough, or a full-time role could be shared across schools. A sliding scale based on school size seems appropriate. There would also be benefit in the role being filled by a non-teacher, to guard against 'creep' from classroom teaching priorities.[186]

Recommendation 10

That the Minister for Education and Training ensures additional funding for FTE allocation for a Sustainability Coordinator role in all schools.

180 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 19.
181 Mrs Louise O'Donovan, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 5, 7.
182 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 5.
183 Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 8.
184 Examples of additional funding provided to schools for Targeted Initiatives include: chaplaincy, additional time for Level 3 classroom teachers, gifted and talented education, specialist career practitioners, and additional support for delivery of mental health programs.
185 Submission 26, Kathy Anketell, p. 3; Submission 52, Australian Association of Environmental Education, p. 39.
186 Submission 26, Kathy Anketell, p. 1.

Corporate services managers could play a greater role

4.17 Evidence to the inquiry revealed that there is scope to engage school corporate services managers more in contributing to climate action. While some were seen to be obstructive, there was a general sense that they are willing to become more involved in the infrastructure and operational aspects of climate action. However, some barriers to this are:

- lack of understanding about the benefits in both climate change mitigation and cost savings, and how their role can contribute[187]
- lack of central guidance on how to achieve improvements, which means individual schools are 'reinventing the wheel'.[188]

4.18 Training for corporate services managers would assist to overcome these barriers, and a school Sustainability Coordinator would work closely with the manager of corporate services to achieve infrastructure and operational improvements. It is encouraging that there is strong representation from the Department's business services and infrastructure divisions on its internal sustainability reference group.[189] There may be opportunities to engage with the peak body for school corporate services managers to promote the benefits of climate action and facilitate training. Expert guidance could also be provided as part of a school sustainability audit, as discussed further in Chapter 5.

Finding 16

There are opportunities to engage school corporate services managers more fully in responding to climate change.

Recommendation 11

That the Minister for Education and Training ensures that the Department's Sustainability Unit and internal reference group formulate a plan to promote the benefits of climate action to school corporate services managers and facilitate training.

Schools need to plan and evaluate their response to climate change

4.19 Even with the support of the principal and most of the enablers in place, it is hard to maintain a whole-school approach without an ongoing active plan.[190] Evidence to the inquiry clearly identified that it is critically important to embed sustainability and climate action into school strategic and operational plans.[191] This demonstrates commitment, provides a unified focus and acts as a measure of accountability.

187 Ms Hannah von Ahlefeld, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 16; Dr Vanessa Rauland, Climate Clever, *Transcript of Evidence*, 23 February 2022, p. 10.

188 Ms Nadia Aurisch, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 16; Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 14.

189 Submission 61B, Department of Education, p. 1.

190 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 23.

191 Ms Rosemary Lynch, Environment House, *Transcript of Evidence*, 18 February 2022, p. 8.

4.20 School planning around climate action should also incorporate:

- specific and achievable goals[192] (one option for this is benchmarking on resource consumption, which is discussed further in Chapter 5), and
- regular evaluation of the level of engagement.[193]

These elements are important for ensuring that the inclusion of sustainability in school planning is meaningful, rather than tokenistic. Measuring progress and mapping out sustainability across a school can also provide inspiration and encouragement to keep going.[194]

4.21 The Department gave evidence that once sustainability is embedded within a school's culture, it generally continues.[195] Evidence to the inquiry established that this is not the case. Even where schools have had climate action embedded in their planning documents, it has been swept away following a revision or when an incoming principal had different priorities or did not consult broadly.[196]

4.22 Despite the Department's opposition, it would be possible to mandate that schools incorporate sustainability into their policy and planning documents while still preserving their independence. A requirement that schools develop a sustainability policy would prompt them to consider how they can act in a way that is relevant and achievable for their unique school community. The policy should be developed in broad consultation with the school community, and its implementation led by a committee to ensure continuity.

Finding 17

Embedding sustainability and climate action into school policy and planning documents is an important factor in driving commitment and progress.

Recommendation 12

That the Minister for Education and Training ensures that schools are required to develop a sustainability policy that specifically identifies climate actions that are achievable and relevant to their unique school context.

192 Mr Alan Benn, Environment House, *Transcript of Evidence*, 18 February 2022, p. 8.
193 Submission 52, Australian Association for Environmental Education, p. 39.
194 Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 9.
195 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 23.
196 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 12; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 8.

Chapter 5

School infrastructure and operations

The material response of schools to climate change needs a strategic approach

5.1 Infrastructure and operations are the main areas in which schools can respond to climate change in a material sense. There are direct climate benefits to reducing the environmental footprint of schools, and seeking out more efficient and cleaner materials and processes.[197] Economies of scale can also be achieved with a systemic approach to procuring climate-friendly school infrastructure and operations.[198]

5.2 Reducing emissions across the vast school estate in Western Australia will naturally require strategic and systemic support, collaboration across government agencies, and significant financial investment. The WA government has shown in the past that it can successfully manage such a huge undertaking – for example, in removing asbestos from education institutions, where the scale and urgency of this task demanded a coordinated and well-resourced systemic response.[199]

The Department is working to establish a strategic approach

5.3 To date, the Department's efforts toward climate change mitigation have been largely project-based, although the results of pilot programs are intended to inform larger work programs in the future. It is only in the early stages of planning and building capacity towards a strategic approach to climate-friendly school infrastructure and maintenance. This includes:

- a building condition assessment program, in conjunction with the Department of Finance, to be rolled out across all schools over four years. This will inform future maintenance planning processes.
- developing a strategic plan to guide maintenance services
- using the Department's small geographic information systems team to embed climate mapping data into infrastructure planning.[200]

5.4 The Department has also done significant work in recent years to establish baseline data on energy and water consumption in schools, and calculating average energy consumption per student per school.[201] This will indicate which schools should be prioritised for support and

197 Rachel Bolstad, 'How can New Zealand schools respond to climate change?', *Set: Research Information for Teachers*, no. 3, 2020, p. 33.
198 Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 14.
199 Submission 25, State School Teachers' Union of Western Australia, p. 15.
200 Mr Rob Thomson, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 9, 19.
201 Submission 61B, Department of Education, p. 2; Mr William Carroll, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 17.

also provide a tool for monitoring behaviour change – the Department is conscious to guard against schools consuming more power following the installation of solar PV panels.[202]

Finding 18

The Department of Education is in the early stages of developing a strategic approach to reducing emissions from school infrastructure and operations.

5.5 In formulating its strategic approach, we would encourage the Department to recognise that the impacts of climate change are felt most by vulnerable students and communities, and that these groups have fewer resources to adapt.[203] This has been reflected to an extent in prioritising regional schools for inclusion in the Solar Schools program. However, an equitable approach should also consider other cohorts that are particularly vulnerable to climate change, as outlined in Chapter One.

Recommendation 13

That the Minister for Education and Training ensures that the Department's strategic approach to climate-friendly infrastructure and operations prioritises communities that are particularly vulnerable to climate change.

Benchmarks give schools something to aim for

5.6 Having established this baseline data, the next logical steps would be benchmarking and target-setting for resource consumption in schools. Sustainability Victoria has developed benchmarks for waste, water and electricity as part of its ResourceSmart Schools program (see Table 5.1).[204] These form part of the star-rating system for schools participating in the ResourceSmart Schools program, but all schools are encouraged to achieve the benchmarks as embedded in the Department of Education and Training's Sustainable Facilities policy.[205]

Table 5.1: ResourceSmart Schools benchmarks

	Maximum usage level per student per year
Waste	0.3m^2 waste to landfill
Water	4 kilolitres mains water usage
Energy	Primary school: 250 kilowatt-hours, 0.4 tonnes CO^2
	Secondary school: 400 kilowatt hours, 0.6 tonnes CO^2

Targets such as these give schools real, achievable goals to strive towards.[206] While it can be difficult to compare schools with varying sizes, facilities and locations, a range of benchmarks can be developed for similar facilities. Some local government areas have

202 Mr William Carroll, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 18.
203 Submission 11, Catholic Education Western Australia, p. 11.
204 Sustainability Victoria, *Baselines and Benchmarks*, 16 January 2021, accessed 30 April 2022, <https://www.sustainability.vic.gov.au/>.
205 Department of Education and Training Victoria, *Sustainable Facilities*, 8 December 2021, accessed 30 April 2022, <https://www2.education.vic.gov.au/>.
206 Mr Alan Benn, Environment House, *Transcript of Evidence*, 18 February 2022, p. 8.

established programs in this regard, which could inform the Department of Education's work in this area.[207]

5.7 Individual school audits are also a valuable tool for identifying areas for consumption reduction and efficiency, and schools can set their own targets.[208] When integrated as part of a whole-school approach, students can have the chance to learn about the costs of the resources they consume while developing an understanding of the units of measurement used.

Recommendation 14

That the Minister for Education and Training ensures that the Department of Education incorporates benchmarks for resource consumption in schools, and provides funding for schools to be audited to assist them to achieve these benchmarks.

5.8 While an overall strategic approach is critical in this area, the specific sub-areas of school infrastructure and operations are all significant areas for action and investment in their own rights. The Department receives significant technical support from partner agencies in this regard and further collaboration across silos should be encouraged at every opportunity.

Built environment and planning

5.9 The construction, operation and maintenance of buildings accounts for almost 25 per cent of greenhouse gas emissions in Australia.[209] There is a significant opportunity to consider how schools can best reduce climate impact from the early stages of site selection, design brief development, procurement, construction and operation.[210]

5.10 The operational policy on planning for school sites was recently reviewed to promote more efficient use of land, such as co-location of community infrastructure and public open space to potentially reduce vehicle trips and water consumption from reticulation. It also encourages active transport (discussed further below). The Department of Planning, Lands and Heritage notes that more site responsive school design could be promoted within the Department of Education.[211]

5.11 From 2021, the Department's Primary Schools Brief and Secondary School Planning Guide have included various sustainability guidelines, including meeting a four-star Green Star rating for sustainability.[212] Green Star is a national voluntary rating system for sustainability

207 Submission 30, Eastern Regional Metropolitan Council, p. 3.
208 Dr Vanessa Rauland & Ms Kathy Anketell, Climate Clever, *Transcript of Evidence*, 23 February 2022, p. 1.
209 Igor Martek & M. Reza Hosseini, 'Buildings produce 25% of Australia's emissions. What will it take to make the 'green' – and who'll pay?', *The Conversation* (web-based), 15 January 2019, accessed 25 April 2022, <https://theconversation.com/buildings-produce-25-of-australias-emissions-what-will-it-take-to-make-them-green-and-wholl-pay-105652>.
210 Submission 35, Department of Planning, Lands and Heritage, p. 1.
211 Submission 35, Department of Planning, Lands and Heritage, pp. 1-2.
212 Submission 61, Department of Education, p. 6.

in the built environment (see Figure 5.1). The Department is working with the Department of Finance to explore opportunities to meet five-star Green Star ratings.[213]

Figure 5.1: Green Star ratings[214]

5.12 Total life-cycle costs are also factored into business cases for each project with material selection and building systems.[215] Design considerations include LED lighting and sensor controls, skylights, timer controls for heating and air-conditioning, natural ventilation, passive solar design water efficient fixtures, local plant species and durable materials. There has also been a commitment to providing 30kW of solar power to new primary school builds from 2021.[216]

5.13 However, environmental performance is still ultimately subject to capital works expenditure constraints.[217] Currently only major school rebuilds and refurbishments above $2 million are considered for inclusion of a four-star Green Star rating, and the ultimate ability to achieve this rating depends on a project-by-project assessment. It is an easier target to achieve for new school builds rather than existing schools.[218]

5.14 The Office of the Government Architect identified that:

> The current situation may present difficulties in meeting net zero goals, and current approaches premised on capital cost minimisation for new schools may be ineffective long term because of increasing operational costs and broader public health impacts.[219]

5.15 It recommends that appropriate construction rates per square metre should be developed with Treasury, with a view to whole-of-life value for money.[220] In 2018, the Auditor General also found that the Department could do more to implement learnings from the WA Schools Public Private Partnership Project regarding design, construction and whole-of-life maintenance costs.[221]

5.16 It is clear that there is more collaborative work to be done between the Department of Education, the Department of Planning, Lands and Heritage and Treasury to settle an approach to investment in school buildings that will support net zero goals.

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213 Submission 61, Department of Education, p. 8.
214 Green Building Council Australia, Introducing Green Star, October 2020, p. 9.
215 Mr Rob Thomson, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 16.
216 Submission 61, Department of Education, p. 6.
217 Submission 12, Office of the Government Architect, p. 5.
218 Mr Rob Thomson, Executive Director Infrastructure, *Transcript of Evidence*, 24 November 2021, p. 15; Submission 61B, Department of Education, p. 3.
219 Submission 12, Office of the Government Architect, p. 5.
220 Submission 12, Office of the Government Architect, p. 5.
221 Office of the Auditor General Western Australia, *WA Schools Public Private Partnership Project*, Perth, June 2018, p. 18.

Finding 19

Expenditure constraints continue to compromise goals for improving the environmental performance of school buildings and achieving net zero emissions.

Recommendation 15

That the Minister for Education and Training, Minister for Planning and the Treasurer adopt an agreed approach on prioritising the environmental performance of school buildings, in support of the WA government's net zero goals.

Case study: Bob Hawke College

Bob Hawke College opened in February 2020 and is the first WA public school to be built with a 4-star Green Star sustainability rating.

The College's environmental footprint has been minimised through the use of three storey buildings that are universally accessible and incorporate passive solar design principles. The buildings are oriented with the long axis running east/west, allowing the majority of glazing to be oriented north/south, taking advantage of the northern aspect. This allows natural lighting without excessive solar heat gain.

Other design features include solar power, electric vehicle charging stations low volatile organic compound materials, and recycled construction and demolition waste processes.

Sustainability is embedded in the College *Business Plan 2021-2023*, with a stated priority of establishing a sustainability framework (environmental, social and economic) to support a sustainable College community.

Source: Site visit, 10 November 2021; Submission 61, Department of Education; Bob Hawke College, *The College*, accessed 7 June 2022, <https://bobhawkecollege.wa.edu.au/>.

Energy

5.17 To date, the major policy response of schools to climate change has focussed on transitioning schools to solar energy (see Box 1.1). This is embedded in the Western Australian Climate Policy and while the Department of Education is listed as the lead agency, this work obviously requires close collaboration with Synergy and Horizon Power. Support for this approach has been easily won, due to the suitability of schools for this function – they have large roof space, high energy usage in daytime hours, and are an ideal location for community batteries. Many schools, particularly those in regional areas, have huge power bills – some up to $1 million a year.[222]

5.18 The investment in the Schools Clean Energy Technology Fund is significant and delivering real benefits to public schools across WA. However, its limitations are:

- it is not an overall solution for the decarbonisation of schools, as it is dependent on the size of the school's rooftop solar PV array. Evidence was given that the typical school PV array is of a size that it only generates 20 to 30 per cent of a school's annual energy requirements.[223] In addition to meeting electricity needs through larger PV arrays, schools should be further supported to reduce their energy consumption through other

222 Clean State, *What are Clean Schools?*, accessed 25 April 2022, <https://www.cleanstate.org.au/>.
223 Submission 60, Horizon Power, p. 5.

upgrades, such as wholescale LED replacements, professional audits and tools to measure and monitor energy use.

- outside inclusion in funded programs, schools still need support to implement their own energy upgrades – it is unlikely that the Schools Clean Energy Technology Fund will cover all WA public schools. This could be done through a loan system.

5.19 Evidence to the inquiry showed that the high capital outlay for climate-friendly infrastructure improvements is a major barrier for schools. The most commonly cited example for this was solar PV panels (including the costly application fees and mandatory engineering reports), although wholescale LED replacements, water-efficient fixtures and professional audits also involve significant cost.[224]

5.20 Outside of inclusion in funded programs, it is up to schools to pay for solar PV panels and other improvements through their one-line budget (often supplemented through significant fundraising). However, this is only designed to fund minor, low-risk works and schools have limited ability to reserve money over several years to fund more significant improvements.[225] The Department says that schools can enter into leasing arrangements for the cost of solar panel installation although there are risks and complications for schools in this.[226]

5.21 It is worth noting that when schools produce an excess of electricity, on weekends, during holidays and outside school hours, they receive no payment for their electricity output.

5.22 A loan system would further support schools to implement their own energy upgrades. The Victorian Government's Greener Government School Buildings program provides upfront funding for solar PV system installation, which is paid back by schools in instalments over five years. Once the cost of the system is paid back, schools then retain 50% of the savings.[227] A similar program could be considered in Western Australia to fund rooftop solar PV and wholescale LED replacements. Other incentives, such as co-contributions or behaviour changes that demonstrate a reduction in energy consumption, could be embedded into the program.

Recommendation 16

That the Minister for Education and Training develops a proposal for an incentivised loan system for schools to implement energy infrastructure upgrades, similar to the Victorian Greener Government School Buildings program.

224 Submission 4, Dunsborough Primary School, p. 2; Submission 28, Environment House, p. 1; Submission 56, Mount Pleasant Primary School, p. 3.
225 Submission 61B, Department of Education, p. 4.
226 Dr Vanessa Rauland, Climate Clever, *Transcript of Evidence*, 23 February 2022, p. 13.
227 Victorian School Building Authority, *Greener Government School Buildings Program*, 16 December 2021, accessed 30 April 2022, <https://www.schoolbuildings.vic.gov.au/>.

Case study: Lynwood Senior High School

Lynwood Senior High School strives to reduce its greenhouse gas emissions by reinforcing behavioural change and retrofitting equipment to reduce resource consumption. A sustainability program coordinator implements innovations which engage and empower students and staff to take further climate action at school and at home.

The school uses ClimateClever – a data-driven program which uses online tools to help schools measure, monitor, compare and reduce their carbon footprint. Data from 2015 – 2020 is discussed below, and savings have been reinvested into new sustainability initiatives.

Electricity

Total savings of $150,088, despite an increase in reverse cycle air conditioner installation. Behavioural change has had a big impact - air conditioning is used selectively and run at recommended temperatures, and a holiday switch-off process has been implemented. Analysis in 2017 showed a payback period of three years for LED replacement. As a result, almost all lighting was upgraded to LED over four years.

Gas

Total savings of $9,306. A major leak was identified and repaired, and gas heaters have been replaced with reverse cycle air conditioning.

Water

Consumption and costs have tracked upwards since 2018. Water audits provided a list of remediation actions, the majority related to repairs. Flow reductors have been installed on most appliances.

Source: Lynwood Senior High School, *Sustainability*, accessed 6 May 2022, <https://www.lynwood.wa.edu.au/>; Submission 26, Kathy Anketell; Lynwood Senior High School Annual Report 2019-2020.

Transport

5.23 The Department of Education collaborates with the Department of Transport (DoT) in various ways to address the declining rate of walking and bike-riding to school, and traffic congestion around schools. This includes:

- quarterly direct meetings to influence activities across various areas, including curriculum, planning and infrastructure
- participation in the DoT's Bike Riding Reference Group
- promotion of the Your Move program in schools, and the Connecting Schools grants for participating schools – 2020/21 marked the first time the Department of Education contributed funding to Your Move, and it is now recruiting a project officer to support delivery of the program[228]
- creation of a development approval condition for schools seeking new demountables or increased parking provision, which requires them to actively participate in the Your Move program.[229]

This collaborative work is culminating in the development of a Memorandum of Understanding to reinforce how the two agencies work together.[230]

228 Submission 61A, Department of Education, p. 1.
229 Mr Justin McKirdy & Ms Michelle Prior, Department of Transport, *Transcript of Evidence*, 18 February 2022, pp. 2-3.
230 Submission 62, Department of Transport, p. 2.

5.24 As discussed in Chapter 3, transport does not feature explicitly in the Department of Education's *Caring for Country Together* sustainability framework. Nevertheless, the increase in collaborative work between these two departments is commendable. It seems to us that other areas of school operations, such as water and waste, could benefit from similar increased and long-term collaboration, and co-funding of projects – evidence to the inquiry suggested that collaboration in these areas is mostly project-based.

Finding 20

The increased collaboration between the Department of Education and the Department of Transport could provide a blueprint for the Department of Education to work with and co-fund projects with other government agencies, such as the Department of Water and Environmental Regulation.

5.25 In 2021, the Department of Transport also completed a significant piece of work around declining active travel to school in Perth, which included a summary of the benefits of addressing the problem, its underlying causes, and opportunities and challenges for reversing the decline.[231] The next stage of this work has been to establish a working group (which includes the Department of Education) to develop a 10-year road map to coordinate various agencies and initiatives to address the problem.[232] We have seen the draft road map and the level of detail and extent of collaboration is impressive. One area the working group should consider is the benefit of bike activities being incorporated into the school sport program. It is hoped that the need to bring a bike to school for sport would see an increase in riding to school with all the attendant benefits documented in Chapter 2.

Case study: Baldivis Secondary College

Baldivis Secondary College opened in 2013. The College is located at the back of a densely populated estate, with only one access road at the time the school opened. Significant growth in student numbers caused traffic congestion and parking problems, which motivated the College to join the Department of Transport's Your Move program in 2015.

Prior to Baldivis Secondary College signing up, Your Move had been a primary-school-based program, and the College's work in adapting the program to high school students was acknowledged by a Your Move Innovate Award in 2016.

The College conducts an online survey twice a year where students register how they get to school. This helps the student Green Team set targets and plan events to promote active transport to school, such as Bike Week races, scooter obstacle courses and free 'walk safely to school' breakfasts. By the end of 2016, active travel to school had increased by 12 per cent.

The College noticed from the survey data that fewer Year 7 students got to school by active transport than other year groups. They worked with Your Move to develop a transition project in 2017, which begins with Green Team students and staff presenting a lesson to Year 6 students at neighbouring schools to prepare them to transition to active transport to high school and build early habits. A communications campaign then promotes Your Move and an access guide maps various active travel routes from surrounding residential areas. Parents are also targeted at orientation day to promote the benefits of active travel and build confidence to allow their children to travel independently. A sustainability workshop is implemented into the Year 7 science curriculum, where students plan their route to school and use scientific method inquiry skills to write a procedure for teaching someone else to plan active travel to school.

Source: Site visit, 27 October 2021; Your Move, *Baldivis Secondary College – The Transition to Year 7*, accessed 7 June 2022, <https://www.youtube.com>.

231 Department of Transport, *The declining rate of walking and cycling to school in Perth*, 2021, p. 5.
232 Ms Michelle Prior, Department of Transport, *Transcript of Evidence*, 18 February 2022, p. 5.

5.26 The DoT made several specific recommendations for actions to increase active transport to school. Many of these are likely to be pursued through the road map. One particular matter which we became aware of as part of the inquiry was the need to simplify the requirements for obtaining a children's crossing warrant. Demand for a crossing must be demonstrated through pedestrian and traffic counts, and yet demand is often difficult to demonstrate if there is no crossing. Special consideration should also be given to establish crossings when new schools are opened, as this presents an optimal opportunity to form positive habits around active transport.[233] The objectives of the warrant criteria should be reviewed to ensure they support and enable active transport to school.

Recommendation 17

That the Minister for Police directs the Children's Crossing and Road Safety Committee (Policy) to review the criteria for children's crossings warrants to ensure they support and enable active transport to school.

5.27 Evidence was provided that the Department of Education's contribution to the Your Move program has been as follows[234]:

2019/20	No funding provided.
2020/21	$15,000
2021/22	$25,000

5.28 When asked for information on the unit cost of parking bay provision at schools, the Department did not provide any detail.[235] The cost of allocating land and building parking bays at schools, including the opportunity cost of the value of the land that is sacrificed for parking, needs to be assessed relative to the current level of investment in active travel options.

Finding 21

The Department of Education's limited investment in supporting active transport to school is significantly disproportionate to the value of land sacrificed for parking at schools. A complete opportunity cost analysis may reveal that greater investment in active transport is justified.

Water

5.29 In addition to the significant curriculum resources and infrastructure support offered to WA schools by the Waterwise Schools program, the Water Corporation was allocated $1.5

233 Submission 62, Department of Transport, p. 7.
234 Submission 61A, Department of Education, p. 1.
235 Submission 61B, Department of Education, p. 18.

million in October 2020 as part of the WA Recovery Plan towards two operational projects around water usage in schools:

- **Water Efficient Public Schools program**
  Water saving upgrades are being provided to 70 of the highest water-using schools in WA (e.g. replacing toilets, drinking fountains, irrigation and air-conditioning systems, or even switching to alternative fit-for-purpose water sources). The aim is to reduce water use by up to 10% per participating school.[236]
- **Waterwise School Grounds program**
  Using best practice landscape design, irrigation and turf management to improve water efficiency and climate resilience of schools grounds. This includes meter installation, reporting groundwater usage, review of existing landscape, irrigation and turf management practices, and staff training.[237]

5.30 Although schools have not been given extra resources by the Department to meet the requirements of these projects (e.g. reporting, implementing recommended new systems), the Water Corporation has worked carefully with schools to ensure that they can manage any infrastructure and assets installed as part of the project.[238]

5.31 The Department of Education will review the results of these programs to identify how to be more water wise when planning for new schools and irrigating existing school grounds.[239] Certain projects, such as a centralised irrigation system in one school, will be evaluated to see whether the investment is cost effective in terms of saving water and time for gardeners and other people within the school.[240] The hope is that the case studies will show the economic benefits of these actions so that other schools can make a business case for similar changes.[241] While this is admirable, we would encourage the Department of Education to continue funding water wise infrastructure investments in schools beyond the two-year expiry of these projects.

Recommendation 18

That the Minister for Education and Training ensures that investment in water efficient infrastructure in schools (especially retrofits) continues beyond the expiry of the current WA Recovery Plan-funded projects.

5.32 Evidence to the inquiry also identified an anomaly in water billing practices between public and private schools. For public schools using the one-line budget there is a clear incentive to be as efficient as possible and to enjoy the benefits when money is saved on utilities. However, for private schools there appears to be a disincentive to save money on water bills and reduce water consumption.

236 Submission 63, Water Corporation, p. 3.
237 Submission 63, Water Corporation, p. 3, Submission 61, Department of Education, p. 10.
238 Mr Damien Postma, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 8.
239 Submission 61, Department of Education, p. 9.
240 Mr Damien Postma, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 8.
241 Mr Damien Postma, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 7.

5.33 Water Corporation confirmed that private schools are currently eligible for substantial discounts on water, sewerage, drainage and irrigation. With the exception of drainage, these discounts do not apply to government schools.[242]

	State Government Schools	Regional Private schools	Metro Private schools
Water service discount	0%	100%	100%
Water usage discount	0%	0% (Step 1) to 70% (Step 15)	0%
Wastewater service discount			
• 1st fixture	0%	73%	73%
• 2nd fixture	0%	72%	37%
• 3rd fixture	0%	79%	53%
• 4th and over	0%	81%	57%
Wastewater volumetric discount	0%	100%	100%
Drainage service discount	100%	100%	100%
Charges apply to connected properties only	✓	✓	✓

5.34 These discounts are likely to shield recipient schools from the cost of water used and the need to embrace water wise practices. The strong climate change and environmental education messages delivered through the Water Corporation's education programs can be greatly enhanced by a school community's ongoing reference to the volume and cost of water consumed. Conversely, students' appreciation of the environmental and economic benefits of water wise action could be weakened if school water bills show discounts rewarding greater consumption.

Finding 22

Water discounts to private schools may have the unintended effect of shielding recipient schools from the need to embrace water wise practices.

Recommendation 19

That the Minister for Water amends the *Water Services (Water Corporations Charges) Regulations 2014* so private schools benefit from the same price signals to drive water efficient behaviours as government schools.

Waste

5.35 The Eastern Metropolitan Regional Council is funding and leading a waste reduction pilot in 14 schools in partnership with the Department of Education. This is intended to inform

242 Submission 63B, Water Corporation, p. 2.

future opportunities to introduce food and garden organics (FOGO) waste systems into schools.[243]

5.36 Trial schools will receive:

- a series of waste audits by volume, reviewing billing and collection cycles
- recommendations for the best waste management systems to reduce landfill, improve recovery, manage associated costs and identify savings, and
- education support to implement a recommended waste system (waste education sessions and incursion for staff, parents and students; display bins and review of canteen operations to ensure maximum recovery).[244]

5.37 Evidence to the inquiry suggested that the Department of Education will need to address several other issues as part of any wider program to be implemented following the pilot program, including:

- Lack of waste infrastructure in schools – WA Schools receive significant benefits from the Waste Authority's WasteSorted School program, including curriculum resources. However, the infrastructure support that this program can offer is modest and limited to grants for accredited schools.[245] The Department of Education must fund waste infrastructure more widely to support a reduction in waste to landfill, and work with corporate services managers (not teaching staff or volunteer parents) to implement new systems.
- The Common Use Agreements between schools, DWER and Waste Collection providers such as Suez and Cleanaway for refuse collections need review to ensure schools are getting the best possible outcomes.[246]
- Schools cleaners' contracts also need to be reviewed to include the option for cleaners to empty recycling bins, food and garden organics bins in addition to the normal bins. Some schools use their students as 'class monitors' to be waste wise – however, this is not the case in all schools and may not be the best use of resources.[247]
- The limited ability of school canteens to incorporate reusable containers and cutlery into their operations due to inadequate staff/volunteers and limited equipment, especially in secondary schools where student numbers are much greater.[248]

Recommendation 20

That the Minister for Education and Training ensures that waste management services and infrastructure are improved at a departmental level to support a reduction in waste to landfill. This should include funding for infrastructure and guidance to schools on implementing systems appropriate to their context.

243 Submission 30, Eastern Regional Metropolitan Council, p. 1.
244 Submission 61, Department of Education, p. 10.
245 Mr Aaron Compton, Waste Authority, *Transcript of Evidence*, 18 February 2022, p. 9.
246 Submission 30, Eastern Regional Metropolitan Council, p. 2.
247 Submission 30, Eastern Regional Metropolitan Council, p. 2.
248 Submission 21, Western Australian School Canteen Association, p. 3.

Green space

5.38 Evidence to the inquiry supported a need to strongly protect trees, bushland and green spaces on school sites, in recognition of their habitat value and potential as an educational resource.[249] It was noted that these were often seen as disposable, particularly in metropolitan areas where land is scarce and there is a high opportunity cost involved in preserving green space and vegetation.[250]

5.39 The Department of Education's work in this area was not clear to us in the course of the inquiry, except for reference in the school brief/planning guide to planting local native plant species on school grounds. Water Corporation is undertaking significant work to improve urban greening and mitigate urban heat under the Waterwise Perth Action Plan. This has included grant funding to local governments for water wise greening projects and an urban tree canopy program.[251]

5.40 Similarly to how the environmental performance of school buildings is compromised by capital expenditure constraints, the Department must settle on a stronger approach which prioritises green space and vegetation in new and existing schools. Sacrificing these in the name of cost savings now may be more expensive in the long-term as the need to adapt to the changing climate presents real challenges for public health and student wellbeing. Failing to protect trees and bushland on school sites is completely at odds with state and local government initiatives to re-wild city environments and increase urban canopy.

Case study: South Padbury Primary School

Miyawaki (tiny) forests are densely planted, containing a diverse array of local native species. They can actively cool schools where there is limited vegetation cover, and can be fitted into any unused space greater than $10m^2$.

South Padbury Primary School students planted the first Western Australian Miyawaki forest in July 2021. This was part of a STEM outreach program developed by Dr Grey Coupland from the Harry Butler Institute at Murdoch University. With ongoing guidance, students are monitoring the growth, air and soil temperature regimes and biodiversity created by the forest over time. Hands-on practical skills include planting, use of scientific equipment, measuring variables (temperature, soil moisture and pH, plant mortality), plant and animal identification, and data collection.

Students also use:

- the Department of Primary Industries and Regional Development's MyPestGuide app to log organisms and receive identification reports
- Carbon Positive's Carbon Footprint Calculator tool, comparing their own carbon footprint with the carbon sequestered by the Miyawaki forest. Students can tangibly see the link between lifestyle carbon emissions and climate change mitigation.

Source: Submission 49, Harry Butler Institute, Carbon Positive Australia and South Padbury Primary School.

249 Submission 28, Environment House, p. 1.
250 Submission 20, Catholic Education WA, p. 8; Submission 26, Kathy Anketell, p. 5.
251 Submission 63, Water Corporation, p. 4.

Diet

5.41 School students consume up to 50 per cent of their daily energy requirements at school.[252] This presents an important opportunity to influence dietary choices and encourage food alternatives that demonstrate low climate impact. Shifting to more sustainable diets, with reduced meat and dairy and more plant-based and alternative protein foods, offers a significant opportunity to improve health and reduce emissions.[253]

5.42 Schools in countries as diverse as the United Kingdom, United States, Sweden, Brazil, Canada and France have embraced 'Meat-Free Monday' or similar campaigns – in some cases, this has been adopted by entire school districts.[254] Other countries such as The Netherlands have already changed their national dietary guidelines to recommend a lower intake of animal-sourced foods in recognition of the health and environmental benefits.[255] The Australian Dietary Guidelines are currently under review by the National Health and Medical Research Council and we hope that this incorporates environmental sustainability elements, as recommended by the World Health Organization.[256]

5.43 Although the inquiry received little evidence on this, there is scope for schools to promote the health and environmental benefits of reducing consumption of animal-sourced foods. Broadening choice is an obvious first step in enabling students to shift to lower-impact eating habits and including more plant-based options on catering menus has been shown to greatly increase their sales.[257] The educative aspect of reducing meat consumption is also important, given the acknowledged challenges in achieving behaviour change at a population level. Consumer choices and dietary preferences are guided by social, cultural, environmental and traditional factors, and institutions and public health policies have the potential to change demand.[258]

5.44 Since 2007, the Department of Education's Healthy Food and Drink Policy has worked towards shifting students' food consumption away from highly processed foods, which has co-benefits for the environment. The Department of Education could now progress this further by working with the Department of Health, the Western Australian School Canteen Association and the WA Health Promoting Schools Association to develop a program to promote reduced consumption of animal-sourced foods.

Finding 23

There are significant opportunities for the Department of Education to increase focus on protecting green space and bushland, and promoting low climate impact diets in schools.

252 Submission 21, Western Australian School Canteen Association, p. 1.
253 Celia Green et al, 'The Greenhouse Gas Emissions of Various Dietary Practices and Intervention Possibilities to Reduce This Impact', in Talia Raphaely and Dora Marinova (eds), *Impact of Meat Consumption on Health and Environmental Sustainability*, IGI Global, Hershey PA, 2016, p. 13.
254 Christine Kiernan and Soren Larsen, 'New York City's public school system goes meat-free on Fridays', *Reuters* (web-based), 4 February 2022, accessed 14 June 2022, <https://www.reuters.com/>.
255 Jenna Hollis et al, 'Investing in early nutrition and food systems for human and planetary health', *Lancet Child and Adolescent Health*, October 2021, p. 2.
256 World Health Organization, *WHO Manifesto for a healthy recovery from COVID-19*, Geneva, 2020, p. 19.
257 Dr Richard Carmichael, *Behaviour change, public engagement and Net Zero*, Centre for Energy Policy and Centre for Environmental Policy, Imperial College London, October 2019, p. 8.
258 Intergovernmental Panel on Climate Change, *Special Report on Climate Change and Land*, 2019, p. 440.

Chapter 6

Curriculum

What is Western Australia's role in relation to curriculum?

6.1 As was made clear to the Committee during the inquiry, the curriculum is the sole mandate that the Department of Education intends to rely on to enable schools to respond to climate change. This, and the educative power that schools have in relation to climate change, means that it is worth examining the curriculum's capacity to accommodate this important task.

6.2 On the one hand, the benefit of founding climate action in the curriculum is that it is driven inside the classroom and doesn't become yet 'another thing' for teachers to do outside their normal work.[259] However, there are also limitations to using the curriculum as the sole mandate for climate action in schools – namely, that it cannot drive systemic reform in the areas of school infrastructure and operations, and that sustainability is fragmented, poorly understood and often overlooked as a curriculum concept.[260] This chapter will further explore that second limitation.

6.3 This committee has limited capacity to recommend curriculum reform, not least because it is highly complex. The Western Australian K-10 curriculum largely encompasses the Australian curriculum, which was introduced in 2014, although some learning area syllabuses have been contextualised to make them more suitable for Western Australian students and teachers.[261] States are unable to unilaterally amend the Australian curriculum's 'three-dimensional' structure (see Figure 6.1). The Australian curriculum has just recently reached the end of a lengthy review process, with an updated version recently endorsed by education ministers and available in Term 2, 2022. There is some hope that previous political imperatives will be overcome and climate change will be referenced more explicitly in this revised version.[262] Despite this, there is scope for Western Australia to determine its own stance in relation to climate change education, and consider how it can best use the curriculum to facilitate schools to respond to climate change.

259 Submission 50, ClimateClever, p. 6.
260 See Chapter 3.
261 School Curriculum and Standards Authority, *Background*, 11 October 2019, accessed 28 March 2022, <https://k10outline.scsa.wa.edu.au/>.
262 Mr Allan Blagaich, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 11.

Figure 6.1: Three dimensions of the Australian Curriculum[263]

Climate change in the curriculum

6.4 The Department of Education states that climate change is incorporated into the Western Australian curriculum in the:

- Humanities and Social Sciences (HASS) and Science curriculum from pre-primary to Year 12, through direct references to 'sustainability' and
- Sustainability cross-curriculum priority from pre-primary to Year 10.[264]

6.5 Many countries apply this approach where climate change is subsumed both under various disciplinary subjects and under the vague cross-curricular notion of 'sustainability'. A recent review of education policies and curricula across 46 UNESCO member states revealed that more than 50% did not mention climate change.[265] However, it creates the difficulty that climate change is 'often treated as a hot potato thrown around from one subject to another, and owned by none', and offers no certainty about the integrity of climate change as a body of knowledge for teachers or students.[266]

The curriculum includes almost no explicit reference to climate change

6.6 While the curriculum may offer some opportunities to incorporate climate change into lessons, explicit reference to climate change in the curriculum is almost entirely absent.[267] This means that schools must 'thread' climate change through lessons spanning different learning areas and year groups, so that students can make connections about its causes and impacts through the lens of 'sustainability'. This is particularly challenging in secondary schools, where collaboration across different learning areas is rarely pursued.[268] By the

263 Australian Curriculum Assessment and Reporting Authority, *Structure*, accessed 28 March 2022, <https://www.australiancurriculum.edu.au/>.
264 Submission 61, Department of Education, p. 2.
265 Submission 52, Australian Association for Environmental Education, p. 10.
266 Submission 31, Dr Efrat Eilam, pp. 1-2.
267 Submission 31, Dr Efrat Eilam, p. 1.
268 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 9.

Department's own admission, 'threading' concepts across the curriculum requires a high level of skill and coordination to be effective:

> Principals, by and large, are challenged to bring that to the fore when they are doing their curriculum planning. Some do it very successfully; others we need to continue to support in how to do that… You do need to have a principal and deputy team on the ball to be able to find those pieces through and to create that connection through, but it is there. It just needs to be woven through.[269]

6.7 Lack of explicit inclusion in the curriculum doesn't preclude teaching about climate change, but means it can be easily overlooked as a concept. A recent survey of WA primary schools teachers indicated that teachers approached teaching climate change in an *ad hoc* and opportunistic way, if at all.[270]

6.8 Educators have also identified that politically charged debate around climate change has polarised the topic and made many teachers reluctant to include it in their teaching programs. Explicitly including climate change in the curriculum would demonstrate a clear position on the evidence and give teachers both licence and context to engage students on the issue.[271]

Finding 24

Lack of explicit reference to climate change in the curriculum does not preclude it from being taught, but it does not support it either.

Sustainability has struggled to gain traction in the curriculum

6.9 Given the lack of explicit content inclusion, schools are left to pursue climate change education through the cross-curriculum concept of 'sustainability'. When the Australian Curriculum was first developed, advocates promoted the inclusion of sustainability as a vehicle for rich integrated learning experiences, through which multiple outcomes could be achieved. In this way, it was intended to simplify the curriculum rather than crowd it.[272]

6.10 However, sustainability as a cross-curriculum priority has been problematic and there is little evidence that it is taught well or widely. When the Australian Curriculum was launched, sustainability was a relatively new concept in education and its definition was unclear. It was presented as a vague and complex set of concepts (see Box 6.1) which was poorly understood by teachers.[273] In comparison to the other cross-curricular priorities, sustainability did not receive the same level of support from curriculum authorities in

269 Mr Allan Blagaich, Department of Education, *Transcript of Evidence*, 24 November 2021, pp. 10-11.
270 Submission 23, UWA Einstein-First Project, p. 5.
271 Submission 22, SDG Target 4.7 & Teachers for a Clean State Network, p. 17; Submission 55, Angela Rossen, p. 2.
272 Submission 52, Australian Association of Environmental Education, p. 13.
273 Dr Rachel Sheffield, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 5.

developing resources for teachers. Many found it difficult to embed sustainability within the well-established scope and sequence of each learning area.[274]

Box 6.1: Key concepts of the Sustainability cross-curriculum priority

The Sustainability priority has been developed around the three key concepts of systems, world views and futures.

The first key concept explores the interdependent and dynamic nature of systems that support all life on Earth and our collective wellbeing.

The second concept enables a diversity of world views on ecosystems, values and social justice to be discussed and recognised when determining individual and community actions for sustainability.

The third concept is aimed at building capacities for thinking and acting in ways that are necessary to create a more sustainable future. The concept seeks to promote reflective thinking processes in young people and empower them to design action that will lead to a more equitable and sustainable future.

Source: Australian Curriculum v8.4.

6.11 Further, the cross-curriculum priorities are not compulsory nor assessable, which makes them easily omitted from classroom programs.[275] In a crowded curriculum, time-poor teachers have little room for optional content, particularly in the face of data-driven school cultures.[276] This can be compounded by teachers lacking confidence and environmental expertise, and being concerned about tokenism.[277]

A lot of kids are really passionate about [climate change]. A lot of our teachers were really passionate about it, but because it is not really specific in the curriculum, I guess they do not have the time to go over it.

- Jasmina Nikolovski, Student

Finding 25

The sustainability cross-curricular priority is the main vehicle through which teachers can teach climate change. However, it is a weak policy imperative for doing so.

Time is running out to create the 'perfect' curriculum

6.12 The committee received evidence with various suggestions on how to best place climate change and sustainability in the curriculum to give it due priority. These included:

- removing sustainability as a cross-curricular priority and establishing climate change as a general capability and content descriptor, so that it might be assessable[278]

274 Submission 52, Australian Association for Environmental Education, p. 13.
275 Submission 52, Australian Association for Environmental Education, p. 32.
276 Submission 33, Dr Brad Gobby, Dr Jane Merewether & Dr George Variyan, p. 4.
277 Dr Allen Hill, Dr Sherridan Emery & Dr Janet Dyment, 'Introduction to the Australian Curriculum Sustainability Cross-Curriculum Priority', *Geographical Education*, vol. 33, 2020, p. 9.
278 Submission 52, Australian Association for Environmental Education, p. 5; Dr Rachel Sheffield, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 5.

- establishing climate change as an independent core subject in the curriculum, in order to advance its status.[279]

6.13 Ultimately, broad curriculum overhaul is beyond the influence of this committee and the scope of this inquiry. That is not to say that it isn't required – it is clear that there is vast opportunity to improve the standing of climate change in the curriculum with more explicit inclusion. However, climate change demands a response more urgently than structural reforms to the curriculum can provide:

> So, yes, we desperately need curriculum change. It is not going to happen overnight, but we cannot wait either… we desperately need policy change, we desperately need curriculum renovations, let us say, but we cannot wait for them. We cannot wait for 10 years for somebody to come up with a perfect solution. There will never be a perfect solution. We need action now. We need people to work together from all of those spheres in education.[280]

Filling the climate change gap in the curriculum

6.14 In any event, exemplar WA schools have demonstrated that it is possible to holistically and effectively embed sustainability and climate action in schools, provided that they are resourced and equipped with the expertise to do so. In this regard, it is possible for the WA education system to fill the curriculum gaps with targeted actions.

Teachers need support to know 'what' and 'how' to teach about climate change

6.15 Evidence to the inquiry identified that teachers struggle with two different aspects of teaching climate change:

- 'what' – teachers feel they may not know enough about climate change themselves to feel confident facilitating student discussions. This is particularly so in relation to scientific concepts[281] and Aboriginal perspectives.[282]
- 'how' – more critically, teachers do not know how to embed climate change in their teaching, or are not given sufficient time to work it out.[283] It is particularly important that teachers develop skills in facilitating problem-solving approaches, reflective practices and practical learning, as these are not only valuable skills but protective factors against climate anxiety.[284]

279 Submission 31, Dr Efrat Eilam, p. 6.
280 Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 4.
281 Submission 23, UWA Einstein-First Project, p. 3; Ms Amelia Turk, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 6; Dr Vanessa Rauland, ClimateClever, *Transcript of Evidence*, 23 February 2022, p. 10.
282 Ms Peg Davies, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 12.
283 Mr Allan Blagaich, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 13; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 3.
284 Submission 23, UWA Einstein-First Project, p. 3; Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 6.

Quality curriculum resources support teachers to know 'what' to teach

6.16 Quality curriculum resources are highly valued by teachers as a time-saver and singular source of information.[285] Evidence to the inquiry made particular note of the significant curriculum support offered by partner agencies' education programs, whose 'scalable, plug-and-play resources allow teachers to engage with the idea of climate change.'[286]

6.17 The Department of Education has taken its own steps to address the challenges of 'what' to teach by allocating over $3 million to develop new curriculum materials which support the continued implementation of the Australian Curriculum.[287] This was a condition of the most recent state school teachers' general agreement, and is accompanied by up to half a day of professional learning to 'unpack' these resources.[288] Not all of the 170 resources relate to climate change or the sustainability cross-curricular priority but the Department has responded to teachers' concerns about the curriculum and committed to providing a level of support that has not been available 'for a long, long time.'[289]

Finding 26

The Department of Education has responded to teachers' curriculum concerns by investing significantly in support materials, including those that address the sustainability cross-curricular priority.

Recommendation 21

That the Minister for Education and Training ensures that teachers are surveyed following the rollout of new curriculum resources to identify areas of further need, especially in relation to sustainability and climate change.

6.18 The committee was interested to learn about a dedicated climate change learning programme prepared as a curriculum resource by the New Zealand Ministry of Education.[290] Aimed at middle and upper high school students, the inquiry-based programme is mainly aligned with the science learning area but also references the social studies, English and technology curricula. It aims to:

- increase awareness of climate change and explain the role science plays in understanding it
- have students understand both the response to and impacts of climate change; globally, nationally and locally
- explore and act on opportunities to contribute to reducing and adapting to the impact of climate change on everyday life.

285 Submission 23, UWA Einstein-First Project, p. 2.
286 Submission 63, Water Corporation, p. 7.
287 Mr Allan Blagaich, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 6.
288 Ms Samantha Schofield, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, p. 10. See also *School Education Act Employee's (Teachers and Administrators) General Agreement 2019*, Clause 61.
289 Mr Allan Blagaich, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 12.
290 NZ Ministry of Education, *Climate Change Learning Programme – Teacher Resource*, July 2020, accessed 30 March 2022, <https://nzcurriculum.tki.org.nz/>.

Most importantly, the final step of the programme has students create and implement their own plan to take action for climate change, in order to feel empowered and less overwhelmed by the issues. There are suggested actions such as driving and flying less, buying local and second-hand where possible, and eating less meat and dairy products.

The programme is also accompanied by a wellbeing guide which provides teachers with background information and tailored resources to help them navigate the delivery of climate change scientific content whilst maintaining student wellbeing.

6.19 It would be worthwhile investigating how the content of this resource might align with the Western Australian curriculum and inform the creation of a similar programme.

Recommendation 22

That the Minister for Education and Training directs the Department of Education to examine the New Zealand Ministry of Education's Climate Change Learning Programme, to determine whether a similar programme could be created in alignment with the Western Australian curriculum.

Professional development supports teachers to know 'what' and 'how' to teach

6.20 Research has established that professional development is a key enabler in:

- raising awareness of sustainability as a priority and important focus of the Australian Curriculum
- understanding sustainability as a concept
- knowing where and how to integrate sustainability into teaching practices.[291]

6.21 Evidence to the inquiry both confirmed the importance of professional development for teachers, and noted an erosion of its priority over time. Professional development builds both confidence and agency.[292]

> ***… we need the skills base to actually give students the agency and the power to engage in that sort of experiential problem-based, project-focused, student-centred approach… I think we are in danger of losing that, and that would be detrimental in terms of tackling the challenges that we face.***
>
> *- Geoffrey Holt, State School Teachers' Union of Western Australia*

6.22 There was particular emphasis on the need for professional development in this area to go beyond online learning. Online delivery offers benefits in some cases, particularly in enabling teachers in regional areas to access programs.[293] However, the benchmark of quality professional development is engaging teachers in practical 'action-learning', where they can see the impacts of climate change in their community, and include planning time for their own lessons.[294]

291 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 19; Submission 52, Australian Association for Environmental Education, p. 37.
292 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 9.
293 Mrs Gabrielle Migliore, Water Corporation, *Transcript of Evidence*, 18 February 2022, p. 4.
294 Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 10.

Conversational and networking styles of professional development have also been found to be valuable (networks are discussed further in Chapter 3).[295] Funding for relief coverage was noted to be an important and highly-valued feature of some existing professional development programs (for example, WasteSorted Schools and Your Move).[296] We note that this funding is provided by partner organisations, not the Department of Education. It is our view that the Department should be assuming at least an equal responsibility towards funding this, if not greater.

6.23 Targeted professional development programs, such as the UWA Einstein-First Project, have shown they can achieve dramatic improvements in teacher confidence, particularly in relation to content knowledge. We received evidence that despite departmental guidelines that science should be taught for two hours a week in primary school, the actual time allocated is typically less than one hour.[297] The suspected reasons for this are the crowded curriculum, and teachers feeling uncomfortable about teaching science. Evaluation of the Einstein-First Project has shown that thirty-six hours of training can equip teachers to comfortably cover the scientific concepts around climate change across primary and middle school.[298]

> ***That is what my recommendation is: that you get the teachers out of the classroom and you give them enriching, exciting, proactive experiences that help them have agency.***
>
> *- Catrina Luz Aniere, Millennium Kids*

Finding 27

Professional development is critical to building skills in teachers to teach about sustainability and climate change, and to know how to embed it in their practice.

Recommendation 23

That the Minister for Education and Training dedicates funding to provide quality professional development opportunities for teachers in relation to sustainability and climate change. Funding should cover the cost of sessions plus relief teacher coverage.

295 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 19.

296 Submission 11, Waste Authority, p. 3; Ms Catrina Luz Aniere, Millennium Kids, *Transcript of Evidence*, 22 November 2021, p. 9.

297 Regarding this, the Department of Education responded that science learning may also be built into integrated units of work, which may extend it beyond an explicit timetabled allocation – see Submission 61B, Department of Education, p. 11.

298 Professor David Blair, UWA Einstein-First Project, *Transcript of Evidence*, 18 February 222, p. 9.

Case study: UWA Einstein-First Project

Einstein-First (EF) is a UWA Physics Department education initiative to address the critical decline in teenage student attitudes to Science, Technology, Engineering and Mathematics (STEM). Modular lessons and activities are being created in consultation with a small group of teacher volunteers, consistent with the current science curriculum.

The EF initiative introduces modern science concepts (e.g. atoms and molecules, heat, forces and light as photons) from an early age through toys, songs, models and games. From Year 6, students are introduced to the science of climate; evidence, explanation and consequences of global warming; and sustainable energy futures. High school modules cover energy (light, sound and heat); energy transfer, wave and particle models; and global systems, including the carbon cycle, and interactions with the biosphere, hydrosphere and atmosphere.

Practical learning activities include working with full-sized solar panels, using the electricity generated to power full-scale devices such as 12-volt drills, water pumps and globes. Students also prepare an activity and presentation on climate change to share with younger students and their families. These activities aim to incorporate factors known to protect against climate anxiety.

Evaluative research has shown that the program is successful in improving students' attitudes towards STEM, particularly for female students.

Source: Submission 23, UWA Einstein-First Project; Dr Jyoti Kaur, UWA Einstein-First Project, *Transcript of Evidence*, 18 February 222, p. 3.

Pre-service teachers need to be equipped to teach sustainability and climate change

6.24 Evidence to the inquiry identified that teacher training also needs to be climate-responsive.[299] University students have limited opportunities to unpack the challenges of embedding sustainability and climate change in teaching practice, as units that focus on this are scarce and offered only as electives.[300] This is because the value of these skills is still not recognised, and the Australian Professional Standards for Teachers contain no provision relating to competency to teach climate change or sustainability.

6.25 A recommendation was made several years ago that the Australian Institute for Teaching and School Leadership identify, in collaboration with teachers, how competencies for teaching sustainability could be most effectively incorporated into their standards.[301] This was not implemented. Systemic change will be driven at this level.

Recommendation 24

That the Minister for Education and Training advocates at a national level, through the Education Ministers Meeting, for incorporating competencies for sustainability and climate change in national teaching standards.

Mentoring is important for graduate teachers and beyond

6.26 The Department of Education explained that mentoring is provided to graduate teachers to enable them to reach the required level of proficiency for full registration.[302] However, the challenges in knowing 'what' and 'how' to teach sustainability and climate change apply not

299 Mr Wayne Bull, Catholic Education Western Australia, *Transcript of Evidence*, 18 February 2022, p. 8.
300 Dr Catherine Baudains, Murdoch University, *Transcript of Evidence*, 23 February 2022, p. 8.
301 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 26.
302 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 24 November 2021, p. 12.

only to graduate teachers – in some ways, they may be better equipped than older teachers who are less familiar with current information on sustainability and climate change.[303]

6.27 Mentoring has been shown to be highly complementary to professional development.[304] Teachers who are seeking to improve their skills in embedding sustainability in their teaching practice can benefit from walking alongside experienced and confident practitioners, and feel less isolated in their 'journey to change.'[305]

Finding 28

Mentoring complements professional learning for all teachers seeking to build their skills in teaching sustainability and climate change, not just graduates.

Reducing teacher workload will better support embedded, holistic learning

6.28 While skills can be fostered through professional development and mentoring, the greatest pedagogical challenge to quality sustainability and climate change education is time. In the face of time pressures and the need to be accountable for measurable outcomes and data, teachers will understandably take the easiest option.[306] Holistic, embedded teaching on sustainability and climate change simply becomes too hard. Explicit teaching methods and uniform pedagogy become more attractive than rich, experiential learning.[307]

Finding 29

Teacher workload significantly impacts the ability to deliver quality sustainability and climate change education.

6.29 This challenge is not unique to Western Australian teachers, or quality teaching on climate change. A recent national survey found that 92 per cent of teachers feel they don't have enough time to prepare for effective classroom teaching.[308] Strategies for addressing this problem include:

- Better utilising the wider school workforce, including support and specialist staff, to help teachers focus on effective teaching, and
- Reducing the need for teachers to 're-invent the wheel' in curriculum and lesson planning, to ease their workload and boost teaching quality.[309]

303 Ms Lisa Rodgers, Department of Education, *Transcript of Evidence*, 30 March 2022, p. 14.
304 Australian Education for Sustainability Alliance, *Education for Sustainability and the Australian Curriculum Project: Final Report for Research Phases 1 to 3*, AESA, Melbourne, 2014, p. 21.
305 Dr Jennifer Pearson, Australian Association for Environmental Education, *Transcript of Evidence*, 22 November 2021, p. 7.
306 Submission 15, Stephen Murray, p. 3; Submission 44, Climate Change Education Network, p. 2.
307 Mr Geoffrey Holt, State School Teachers' Union of Western Australia, *Transcript of Evidence*, 22 November 2021, pp. 7, 10.
308 Jordana Hunter, Julie Sonnemann and Rebecca Joiner, *Making time for great teaching: How better government policy can help*, Grattan Institute, Melbourne, 2022, p. 13.
309 Jordana Hunter, Julie Sonnemann and Rebecca Joiner, *Making time for great teaching: How better government policy can help*, Grattan Institute, Melbourne, 2022, pp. 3-4.

These strategies further support the committee's recommendation that dedicated, specialist positions be created for coordinating and delivering sustainability and climate change programs in schools (see Chapter 4).

MR C.J. TALLENTIRE, MLA
CHAIR

Appendix One

Committee's functions and powers

The functions of the Committee are to review and report to the Assembly on:

a) the outcomes and administration of the departments within the Committee's portfolio responsibilities;

b) annual reports of government departments laid on the Table of the House;

c) the adequacy of legislation and regulations within its jurisdiction; and

d) any matters referred to it by the Assembly including a bill, motion, petition, vote or expenditure, other financial matter, report or paper.

At the commencement of each Parliament and as often thereafter as the Speaker considers necessary, the Speaker will determine and table a schedule showing the portfolio responsibilities for each committee. Annual reports of government departments and authorities tabled in the Assembly will stand referred to the relevant committee for any inquiry the committee may make.

Whenever a committee receives or determines for itself fresh or amended terms of reference, the committee will forward them to each standing and select committee of the Assembly and Joint Committee of the Assembly and Council. The Speaker will announce them to the Assembly at the next opportunity and arrange for them to be placed on the notice boards of the Assembly.

Appendix Two

Inquiry process

The Education and Health Standing Committee resolved to conduct an inquiry into the response of Western Australian schools to climate change. The inquiry terms of reference were announced by the Speaker of the Legislative Assembly on 9 September 2021 and the details were placed on the Committee's web page with a guide for submissions.

The Committee wrote to a number of stakeholders inviting submission, and also advertised for submissions in *The West Australian Newspaper* on 18 September 2021. The Committee received 63 submissions in response (see Appendix Three).

From 28 to 30 September 2021, the Committee secretariat attended the Australian Association for Environmental Education (AAEE) Biennial Conference 2021, *Mandjoogoordap: Changing Tides*, in Mandurah. Mrs Lisa Munday MLA, Member for Dawesville, delivered an opening address at the conference on behalf of the Minister for Environment and Climate Action.

Evidence was also gathered in 12 hearings and 3 school site visits. Parties who provided oral evidence to the Committee are listed in Appendix Four.

The Committee is grateful to all those who made contributions to the inquiry.

Appendix Three

Submissions received

No.	Name	Position	Organisation
1	Mr Noel Klopper		
2	Anonymous		
3	Dr Sky Croeser		
4	Mr Michael Baldock	Chairperson	Dunsborough Primary School Board
5	Mr Fettes Falconer		
6	Anonymous		
7	Anonymous		
8	Miss Isabella Poll		
9	Mrs Emma Shaw		
10	Mr Travis Drysdale		
11	Mr Reg Howard-Smith	Chairman	Waste Authority
12	Ms Melinda Payne	Associate to the Government Architect	Office of the Government Architect – Department of Planning, Lands and Heritage
13	Dr Jaimie Drysdale		
14	Ms Angela Kelly	Acting Deputy Director General	Department of Health
15	Mr Stephen Murray		
16	Mr Brad Archer	Chief Executive Officer	Climate Change Authority
17	Dr Tarun Weeramanthri	Independent public health consultant	
18	Dr Bennie Ng	Chief Executive Officer	Australian Medical Association
19	Anonymous		
20	Dr Debra Sayce	Executive Director	Catholic Education Western Australia
20A			
21	Ms Amanda Ferguson	Acting Chief Executive Officer	Western Australian School Canteen Association Inc.
22	Mr Rees Barrett	Consultant Convenor	SDG Target 4.7 Teachers for Clean State Network
23	Dr Jyoti Kaur	Research Associate	Einstein First Project – The University of Western Australia
23A			
24	Ms Catrina Luz Aniere	Chief Executive Officer	Millennium Kids Inc.

25	Samantha Schofield	Vice President	The State School Teachers' Union of Western Australia Inc.
26	Kathy Anketell		
26A			
27	Mr Jason Waters	Chief Executive Officer	Synergy
28	Ms Rosemary Lynch	Chairperson	Environment House Inc.
28A			
29	Melanie Harrington		
30	Ms Wendy Harris	EMRC Chief Sustainability Officer	Eastern Metropolitan Regional Council
31	Dr Efrat Eilam		
32	Ms Pania Turner	President	Western Australian Council of State School Organisations
33	Dr Brad Gobby	School of Education	Curtin University
	Dr Jane Merewether	School of Education	Edith Cowan University
	Dr George Variyan	Faculty of Education	Monash University
34	Ms Vanessa Fountain	Teacher	West Coast Steiner School
	Ms Holly Petersen	Teacher	
35	Ms Fiona Cohen	Government Relations Coordinator	Department of Planning, Lands and Heritage
36	Peta Scorer		
37	Tim Hill		
38	Mr Colin Pettit	Commissioner for Children and Young People Western Australia	Commissioner for Children and Young People Western Australia
39	Dr Blanche Verlie		
40	Dr Catherine Baudains		Murdoch University
41	Melanie Bainbridge	Sustainability Lead	City of Canning
42	Dr Marilyn Palmer		Edith Cowan University
	Dr Peta White		Deakin University
	Dr Sandra Wooltorton		University of Notre Dame
43	Tynan Simojoki	Chair	Education for Sustainability – Great Southern
44	Dr Peta White		Climate Change Education Network
	Dr Eve Mayes		
	Natalie Purves		
45	Dr Om Dubey	Director	Climate Change Response
46	Professor Jonathan Carapetis	Executive Director	Telethon Kids Institute
47	David McEwen	Submissions Coordinator	Australian Parents for Climate Action

48	Professor Stephen Winn	Executive Dean	School of Education, Edith Cowan University
49	Dr Grey Coupland	Research Fellow	Harry Butler Institute, Murdoch University
	Professor Simon McKirdy	Pro-Vice Chancellor	Harry Butler Institute, Murdoch University
			Carbon Positive Australia
			South Padbury Primary School
50	Dr Vanessa Rauland	Chief Executive Officer and Founder	ClimateClever
50A			
51	Linda Malone	Head of Service and Community Partnerships	Presbyterian Ladies' College Perth
52	Dr Jennifer Pearson	Chair President and Convenor	Little Green Steps WA WA Chapter, Australian Association for Environmental Education
	Ian Anderson	President	Western Australian Primary School Principals Association
	Kathy Anketell	Schools Sustainability Specialist Sustainability Program Coordinator	ClimateClever Lynwood Senior High School
	Nadia Aurisch	Climate Lead and Environmental Consultant	MCC Environmental
	Rees Barrett	Consultant Convenor	SDG Target 4.7 Teachers for a Clean State Network
	Abdoul Wahab Coulibaly	Programme Specialist, Section of Education for Sustainable Development	UNESCO
	Peg Davies	Former Waste Education Officer	Mindarie Regional Council Lessen with Peg – Rethink Waste
	Gun Dolva	Lecturer and Programme Co-ordinator, Environmental Science and Sustainability	North Metro TAFE
	Professor Annette Gough	Professor Emerita of Science and Environmental Education, School of Education	RMIT University
	Geoff Holt	Level 3 Classroom Teacher, HASS and Global Schools Advocate Executive Committee	Busselton Senior High School State School Teachers' Union of WA
	Phil Idle	Director International Board previous Chair	eiw Architects Association for Learning Environments

	Joanna Jenkin	Head, Sustainability Committee	Mosman Park Primary School
	Professor Michele John	Director, Sustainable Engineering Group	Curtin University
	Dr Sonja Kuzich	Senior Lecturer, Curriculum and Pedagogy, School of Education	Curtin University
	Dr Elaine Lewis	Cross Curriculum Leader	Coolbinia Primary School
	Catrina Luz Aniere	Chief Executive Officer	Millennium Kids
	Rachel Roberts	Sustainability Officer Co-ordinator	Hillcrest Primary School Environment House Inc.
	Dr Anne-Marie Ross	Sessional Academic, Research College of Human and Social Futures	University of Newcastle
	Professor Pasi Sahlberg	Professor of Education Policy	University of New South Wales
	Dr Rachel Sheffield	Associate Professor, Science Education, School of Education	Curtin University
	Professor Petra Tschakert	Department of Geography and Planning	University of Western Australia
	Hannah von Ahlefeld	Former OECD Education Policy Analyst	
53	Jennifer Griffiths		
54	Jaime Yallup Farrant	Convenor	Climate Justice Union
54A			
55	Angela Rossen		
56	Dr Michael Andrewartha	STEM Professional	Mount Pleasant Primary School
57	Geoffrey Holt		
58	Anonymous		
59	Dr Naomi Joy Godden	Members	Edith Cowan University Strategic Research Centre for People Place and Planet (CPPP)
	Professor Mindy Blaise		
	Professor Angus Morrison-Saunders		
	Dr Libby Jackson-Barrett		
	Dr Mehran Nejati		
	Dr Mostafa Naser		
	Donna Jones	Bachelor of Social Work Student	Edith Cowan University
	Georgia Beardman		
60	Ms Stephanie Unwin	Chief Executive Officer	Horizon Power

61	Ms Lisa Rodgers	Director General	Department of Education
61A			
61B			
62	Mr Peter Woronzow	Acting Director General	Department of Transport
62A	CLOSED		
62B	Mr Peter Woronzow	Acting Director General	
63	Mr Pat Donovan	Chief Executive Officer	Water Corporation
63A	Mr Damien Postma	Manager Demand Delivery, Customer and Community Relations	
63B	Mr Pat Donovan	Chief Executive Officer	

Appendix Four

Hearings and site visits

Hearings

Date	Name	Position	Organisation
22 November 2021	Ms Samantha Schofield	Vice President	State School Teachers' Union of Western Australia
	Mr Geoffrey Holt	Committee Executive Member	
22 November 2021	Ms Jennifer Blair	Senior Vice President	Western Australian Council of State School Organisations
	Mrs Anne Fairbanks	Vice President	
22 November 2021	Ms Catrina Luz Aniere	Chief Executive Officer	Millennium Kids
	Miss Isabella Poll	President, Youth Board	
	Miss Amelia Turk	Member, Youth Board	
22 November 2021	Dr Jennifer Pearson	President and Convenor, WA Chapter Chair Chair	National Australian Association for Environment Education Inc. Australian Sustainable Schools Alliance Little Green Steps
	Dr Rachel Sheffield	Associate Professor, STEM Education Co-Convenor	Curtin University Education Committee United Nations Association of Australia, Western Australian division
	Ms Hannah Von Ahlefeld	Co-author, Submission	Australian Association for Environmental Education
	Ms Nadia Aurisch	Environmental Scientist	MCC Environmental
	Mr Geoffrey Holt	Executive Member, Committee Teacher	State School Teachers' Union of WA Busselton Senior High School
	Ms Peg Davies	Waste Educator	Lessen with Peg: Rethink Waste
	Ms Donna Nelson	Member	Pioneers Aboriginal Corporation
	Miss Jasmina Nikolovski	Student	Australian Association for Environmental Education

24 November 2021	Ms Lisa Rodgers	Director General	Department of Education
	Mr Jay Peckitt	Deputy Director General, Education Business Services	
	Mr Rob Thomson	Executive Director Infrastructure	
	Mr Martin Clery	Executive Director, Statewide Services	
	Mr William Carroll	Manager Strategic Projects, Sustainability Unit	
	Mr Allan Blagaich	Executive Director	School Curriculum and Standards Authority
	Mrs Louise O'Donovan	Principal	Beeliar Primary School
18 February 2022	Professor David Blair	Emeritus Professor	Einstein- First Project: University of Western Australia
	Dr Jyoti Kaur	Research Fellow	
	Mr David Wood	Adjunct Senior Research Fellow	
	Dr Elaine Horne	Project Research Associate	
	Ms Kyla Adams	PhD Student	
18 February 2022	Dr Debra Sayce	Executive Director	Catholic Education Western Australia
	Mr Wayne Bull	Deputy Executive Director	
	Ms Laura Allison	Team Leader, Psychology Safety and Wellbeing	
18 February 2022	Mr Justin McKirdy	Executive Director, Urban Mobility	Department of Transport
	Ms Michelle Prior	Director, Active Transport and Safety	
	Ms Helen Ginbey	Manager, Travel Behaviour Change	
18 February 2022	Mr Aaron Compton	Acting Director, Waste Avoidance and Resource Division	Waste Authority
	Ms Jennifer Weston	Acting Program Manager, Communication and Education, Waste Avoidance and Resource Division	
	Mrs Gabrielle Migliore	Lead Customer Education	Water Corporation
	Mr Damien Postma	Manager, Demand Delivery, Environmental Scientist	

18 February 2022	Ms Rosemary Lynch	Chairperson	Environment House
	Mr Alan Benn	Energy Auditor	
	Mrs Alex Ellis	Volunteer Coordinator	Environment House Gardening and Sustainability
23 February 2022	Dr Vanessa Rauland	Founder and Chief Executive Officer	ClimateClever
	Ms Kathy Anketell	Schools Program Delivery and Support	
23 February 2022	Dr Catherine Baudains		Murdoch University

Site Visits

Date	Name	Position	Organisation
20 October 2021	Mr Paul Westcott	Principal	Coolbinia Primary School
	Dr Elaine Lewis	Cross Curricular Coordinator	
27 October 2021	Ms Jessica Shepley	Science Teacher	Baldivis Senior College
	Ms Jessica Wilkins	Science Teacher	
10 November 2021	Mr Adrian Lee	Associate Principal	Bob Hawke College
	Ms Nicole Cooper	Manager Corporate Services	
	Ms Anne Sashegyi	Science Teacher and Sustainability Team Leader	
	Mr Matthew Titmanis	Head of Science	
	Peter	Student	

Appendix Five

Acronyms

AuSSI	Australian Sustainable Schools Initiative
DoT	Department of Transport
DWER	Department of Water and Environmental Regulation
EfS	Education for Sustainability
EF	Einstein-First
FTE	Full-time equivalent
GHG	Greenhouse gas
HASS	Humanities and Social Sciences
LED	Light-emitting diode
PV	Photovoltaic
SCETF	Schools Clean Energy Technology Fund
SSTUWA	State School Teachers' Union of Western Australia
SSWA	Sustainable Schools WA
STEM	Science, Technology, Engineering and Mathematics
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UWA	University of Western Australia
VPP	Virtual Power Plant
WA	Western Australia
WACSSO	Western Australian Council of State School Organisations

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