

# SCHOOLS: TAKING THE LEAD IN OUR LOW CARBON TRANSITION

## PROJECT FACTSHEET



## KEY POINTS

- Many school buildings are old and inefficient
- There is no national benchmark for energy/water efficiency of school buildings and little guidance available for schools to increase their operational performance
- We tracked how a community-led low carbon program enabled 15 schools to maximise their operational efficiency and achieve carbon neutrality and, in turn:
  - reduce utility bills and CO<sub>2</sub> emissions
  - improve the health, comfort and wellbeing of students and teachers, which can translate to productivity and learning outcomes
  - demonstrate community leadership, participation and learning
  - support a transition to a low carbon future.

## THE OPPORTUNITY

Energy efficient schools can provide healthier and more comfortable education and learning environments. However, school buildings and facilities are part of Australia's ageing and energy inefficient building stock.

Initiatives to improve energy efficiency are hampered by the absence of national performance benchmarks, a lack of



Credit: Jean Paul Horre

### CRC for Low Carbon Living

The CRC for Low Carbon Living (CRCLCL) is a national research and innovation hub that seeks to enable a globally competitive low carbon built environment sector and is supported by the Commonwealth Government's Cooperative Research Centres programme.

With a focus on collaborative innovation, the CRCLCL brings together property, planning, engineering and policy organisations with leading Australian researchers. It develops new social, technological and policy tools for facilitating the development of low carbon products and services to reduce greenhouse gas emissions in the built environment. For more information visit [www.lowcarbonlivingcrc.com.au/](http://www.lowcarbonlivingcrc.com.au/)

information about how schools can best reduce their emissions and increase their operational performance, and limited financial resources for funding low carbon initiatives.

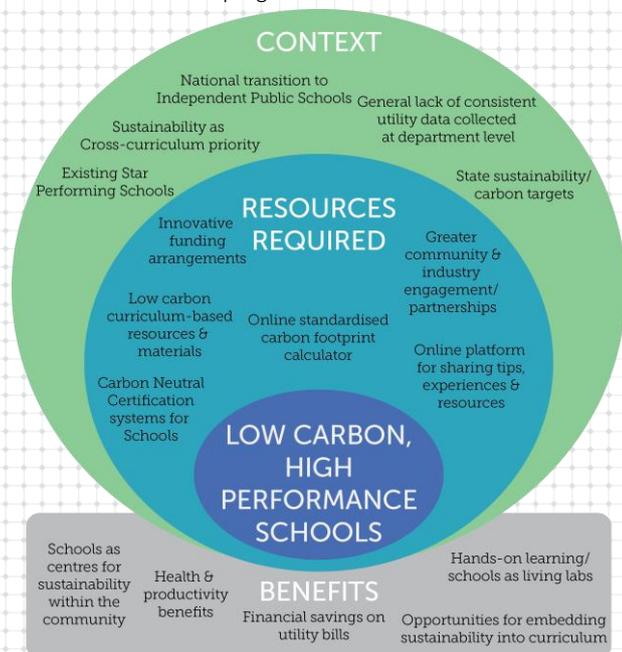
Nevertheless, studies have demonstrated the abundant carbon abatement opportunities that exist by retrofitting and upgrading the sector's ageing building stock. If the main barriers can be overcome, schools provide a significant opportunity for energy efficiency and liveability gains, while simultaneously educating the next generation about sustainability and low carbon living. Given the important role schools play as connectors in our community, there is also a unique and unparalleled opportunity to create intergenerational and societal change, as children take their knowledge home and into their communities.

## OUR RESEARCH

We designed a new Low Carbon Schools Program to help reduce the operational carbon emissions from energy, water and waste in school buildings. The program also built community awareness, increased knowledge, and provided opportunities for initiatives to be implemented in the home. Fifteen schools were chosen to participate in the trial (10 primary and five secondary). The schools ranged in size from 80 students to 1400, though in 2016, the numbers increased significantly for several schools.

The program was developed through the following steps:

- Identification and mapping of existing sustainability and low carbon school programs across Australia;
- Examination of the barriers and enablers for schools pursuing carbon reduction;
- Development and testing of an innovative, data-driven, scalable low carbon schools approach, drawing upon lessons learnt from other programs.



## RESULTS

Emissions reduction (13 schools reported; 2015-17)	266 tCO <sub>2</sub> -e
Emissions offset (15 schools; 2015 emissions)	3,800 tCO <sub>2</sub> -e
Carbon footprint reduction (13 schools reported)	20%
Cost savings (total)	\$38,000
Cost savings (average per student for 70% of schools)	\$30
Low carbon actions across 15 schools	633

## OUTCOMES

Our program has enabled schools to track their carbon emissions and costs, create realistic low carbon actions plans, and establish a systematic approach to implementing them. Monthly 'meet-ups' allowed participants to share experiences and break down barriers.

Various new community partnerships were formed during the program, one of which resulted in a tree planting program. Students, parents and school staff from 13 of the 15 schools collectively planted over 50,000 trees, which more than offset the 15 schools' baseline emissions, enabling them to become carbon neutral; an achievement beyond our expectations.

Our research and the development of our program has resulted in:

- Significant carbon reduction and financial savings on utility bills
- Potential improvements in health, wellbeing and productivity;
- Increased student learning opportunities around sustainability, climate change and low carbon living

Community engagement creating the opportunity for intergenerational and societal change.



Credit: David Baylis

## NEXT STEPS

Building on the experience of our local program, a new national program was launched in early 2018 - 'The ClimateClever Initiative'. This new program has distilled the most effective components of the Low Carbon Schools program to create a set of innovative, data-driven and evidence-based online tools and learning resources. These include:

- A national online carbon footprint calculator to track and compare consumption, carbon and costs
- A building audit tool to measure and compare all resource consuming appliances and fixtures in the school
- An interactive action plan, that provides tailored tips and ideas and allows schools to manage their action plans
- A cost-benefit calculator that provides simple return-on-investment calculations
- New curriculum-based resources (including lesson plans) tailored to the online tools and low carbon initiatives.

A home version of the App will be available in 2019 and will track the intergenerational change and impact schools are having on their communities. The ClimateClever Initiative is available to all schools. To register interest or join the program, visit

<http://climateclever.org>.

## PROJECT TEAM

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## REPORT

Rauland, V., Odell, P., Hall, S., Newman, P. and Lewis, A. 2014. **Low Carbon, High Performance Schools - Scoping Study**. CRCLCL

## FURTHER INFORMATION

For more information about this research project, please contact:

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