

Inquiry into the response of Western Australian schools to climate change

Submission from Kathy Anketell

I am a sustainability practitioner and I am making this submission as a private citizen. I have worked in and with schools in this role for 15 years. I managed the Carbon Neutral Program at South Fremantle SHS and during my tenure the school became the first NCOS accredited Carbon Neutral school in Australia.

I have been employed part-time since 2015 by ClimateClever in several roles, currently as the Schools Sustainability Specialist. I am also employed part-time at Lynwood SHS as the Sustainability Program Coordinator and as far as I am aware, I am the only person employed by DoE in this role.

I have confined my submission to climate change mitigation and adaptation as this is my area of expertise and experience.

Background: Apart from the numerous greenhouse reduction actions undertaken at South Fremantle SHS a 'Carbon Neutral Cluster' was established. My role was to advise and support the SFSHS's feeder primary schools – this worked well as I was able to advise them on actions that had already been tried and implemented i.e. retrofits on lighting, PVs, water saving etc.

In WA over 40 schools have participated in the Low Carbon Schools Pilot Program which has evolved into the ClimateClever App.

In my opinion what would assist schools to reduce greenhouse emissions is;

- Leadership in each school being committed to improving this area of business.
- Employing a dedicated sustainability practitioner to be responsible for data monitoring and undertaking actions on climate mitigation. While a teacher can fill this role I don't think they should, as when there is a refocus at the school or staff shortage they get sent back to teaching. I have seen this situation numerous times working with ClimateClever schools. In some ClimateClever schools parents have taken on this role and have been amazing. However when their children leave the position often lapses.
- A dedicated sustainability coordinator could either be part time, (2 days a week in a high school) or a full time position shared between schools.
- Using the ClimateClever App, it provides useful data, is relatively low cost, 'Actions' to guide GHG reductions, has curriculum resources, plus a support team.

On a personal level I think that the 'tech fix' is not addressing the issue holistically. As individuals we all need to take some level of personal responsibility. Governments also need to raise their game, legislate, put in the \$\$\$. I believe that it is imperative that we enable our young people to live and act in hope - we owe it to them to be better. Without hope we are really in trouble on so many levels.

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

- How and why have these actions been initiated within schools?

My work with schools has enabled me to see how many school communities are desperate to address climate change. Parents are concerned for their children's future, teachers with full programs give so much extra time and energy as they feel it is imperative to take a leadership role in this area. Principals use a range of techniques to bring their school community on the climate change mitigation journey.

- The Committee is particularly interested to hear about examples of climate

action in schools which:

o are low or zero cost

- Some schools have worked with their CUA electricians and have undertaken an incremental switch from fluorescent to LED lights. This saves 50% on lighting. Schools have 100's of lights and there are over a 1000 schools in WA. This simple action will save \$100,000's in electricity costs, LEDs last approx. 50,000 hour and as a result there are ongoing savings due to virtually no maintenance costs . **Addendum 1.** Provides figures on savings for one classroom block.
- Using ClimateClever data water leaks have been identified and supported by Water Corp these have been traced and fixed. There is no cost to the school as this remediation work is covered by BMW.
- At Lynwood SHS a 10-year gas leak was repaired by BMW resulting in ongoing reduced bills.
- Waste streams have a hierarchy of costs ranging from General Waste (landfill), Comingled recycling, Green Waste (compost product) and Paper and cardboard (a high value resource). By separating waste costs can be reduced and there are strong environmental benefits.

o have been locally developed

The ClimateClever App was developed in WA and was a direct result of work undertaken at South Fremantle SHS which alerted, then PhD candidates Sam Hall and Vanessa Rauland to the opportunities for meaningful climate action in schools. A 15-school trial, the Low Carbon Schools Pilot Program (LCSP) which ran for 2 years demonstrated a clear case to continue to develop the program. ClimateClever is now a national program with schools across Australia participating.

Dr Portia Odell completed her PhD on the LCSP which demonstrated multiple benefits to schools
Extract:

https://www.researchgate.net/publication/303303471_Carbon_Tools_Frameworks_for_Institutional_Precincts_Stage_1_Low_Carbon_High_Performance_SchoolsCSPP

Full thesis:

https://www.researchgate.net/publication/303303471_Carbon_Tools_Frameworks_for_Institutional_Precincts_Stage_1_Low_Carbon_High_Performance_Schools

o involve community partnerships

Local governments are very active in climate mitigation and their sustainability officers work with schools. They may provide small grants, revegetation activities, guidance and when an LGA is partnered with ClimateClever schools receive a 50% reduction on the sign-up cost. P&Cs, particularly in primary schools, provide 'hands on' and financial support. Parents can in many cases be a useful resource for time poor teachers.

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

- Barriers may include (but are not limited to):

o complexity

School buildings create a significant amount of greenhouse emissions, notability due to the age of buildings and poor design. Addressing the poor performance of school buildings can be begun by schools with lighting retrofits. However, a systemic approach which enables schools' input will have the greatest benefits.

The diverse climates in Western Australia present challenges and it is my experience that some NW schools have not benefited from building designs undertaken by professionals based in the SW of the state. It is not unusual for NW high schools to have an annual electricity bill of over \$1million.

Broome SHS has a whole building where the reverse cycle air conditioner runs 24/7, apparently mould grows on the walls if the a/c is turned off. This issue is clearly one that needs to be addressed to reduce running costs. Local architects have the skills to understand the different climate in the regions and provide remediation ideas and designs suited to the local climate.

o resources and cost

Climate change mitigation should be undertaken by all schools, the benefits are multifaceted. These include financial savings - see **Addendum 2**, mental health benefits for staff and students who are at times overwhelmed and depressed by the lack of action on climate change. The cost of employing a non-teaching sustainability practitioner is approx. \$76,000 which includes school holidays. A full-time position could be shared between one high school and up to 5 primary schools.

o policies and regulations –

- Some P&Cs fundraise for PV arrays but are often defeated by bureaucratic impediments.
- Many PV companies were keen to provide solar arrays free if schools signed up to a Power Purchase Agreement, Dept of Finance regulations precluded this. My understanding was that leasing PVs was considered a risk. I realise that there may be other issues I am not aware of however; schools are able to lease laptops and loan them to students which seems a considerable risk.

o reluctant attitudes towards climate action.

I have experienced very little reluctance to climate actions that I have undertaken in schools. As the climate change emergency worsens, more staff are seeking my assistance with projects and ideas.

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

- How can capacity be built within schools to prepare for and respond to climate change?

- Climate Mitigation/ Sustainability needs to become core business and a dedicated sustainability directorate focused on climate mitigation would be helpful to schools.
 - Schools could adopt a Climate Mitigation/Sustainability Policy to enable and guide staff.
- Addendum 3.** Lynwood SHS Sustainability and Climate Action Policy
- Providing funding for a part time Sustainability Program Coordinator who has responsibility for climate mitigation measures, a non- teaching role.
- <https://search.jobs.wa.gov.au/page.php?pageID=160&AdvertID=194178&source=other>

- How can schools be equipped to make well informed decisions about undertaking climate action?
- How are schools outside WA being supported to undertake climate action, and could aspects of this be adopted in WA?

Dr Vanessa Rauland CEO of ClimateClever is addressing this in her submission and she has the experience and expertise to provide an excellent overview.

What actions is the Committee considering?

The Committee will consider school-based climate change mitigation and adaptation

actions including (but not limited to):

- water

Data mounting is key to understanding water use in schools and undertaking prompt action to address water loss, the ClimateClever App provides appropriate data collection. Water Corp will provide live-time data monitoring if a water leak is suspected and if the school has staff to review the data on an ongoing basis.

Schools Manager of Corporate Services are responsible for oversight of all non- teaching staff, the finances of the school, buildings and grounds maintenance and oversight of new building programs - it is almost impossible for them to find the time to undertake the detailed follow up on complex water issues.

- energy

At South Fremantle SHS Greensense data loggers were used for live-time electricity monitoring. Understanding the effect of shutting down 60 computers at the end of the day and observing the difference that it made was very impressive 5.6kWh. This was only feasible as there were two buildings on separate data loggers. Relying on the whole school data logger only would have made the data more difficult to read. The fine-grained data was very instructive. This isn't really feasible for most schools as data is only useful if someone reads it and then follows up.

At SFSHS 6 hour push button timers were installed resulting in a reduction of the run time of the computers to less than 700 hours a year, compared to 4,800 hours.

- transport

DoT provide programs for schools which aim to reduce car trips, provide health improvements as students increase their walking or cycling and reduce road congestion

- biodiversity and green spaces

The retention of trees and greenspaces at schools are essential for numerous reasons, these include reduction of the heat island effect caused by urban destiny, with appropriate plant section biodiversity can be increased and students benefit academically from having access to green spaces.

Trees on school sites are often seen as a disposal product rather than vital for the above reasons. Trees are the first victims of school building programs. If, for example two storey buildings were built there would be a smaller footprint and increased retention of green space.

- purchasing and waste

Many ClimateClever schools have adopted a purchasing policy based on sustainability criteria. Waste reduction and separation is an area of climate mitigation that schools are increasingly engaged with **Addendum 4. Recycling Stream Lynwood SHS**

Addendum 1.

Lynwood Senior High School LED Lighting Comparisons 21.07.2017

'A' Block – 8 CLASSROOMS

Synergy Tariff

- Peak Charge - 8.00am – 10pm weekdays **28.343 cents /kWh**
- Off Peak Charge – all other times **8.446cents /kWh**

'A' BLOCK CURRENT CLASSROOM COST ESTIMATES				Annual cost
36 x 1200mm fluoro tubes	@ 39w (36w tube + 3 watts ballast & starter)	1.404 kWh @ 28.343 cents	\$0.39 per hour x 40 hours = \$15.91 per week X 40 weeks =	\$636.60 pa

'A' BLOCK PROJECTED COST ESTIMATES				Annual cost
36 x 1200mm LED tubes 2 tubes per fitting	@ 18 w	0.648 kWh @ 28.343 cents	\$0.18 per hour x 40 hours = \$7.34 per week X 40 weeks =	\$293.86 pa
Other Benefits	Research shows 'Daylight' LED improve academic outcomes (see reference 1.)			

Annual projected saving \$342.74 per classroom

COST TO SWITCH FROM FLUORO TO LED	
36 x 4' LED tubes @ \$14.90	\$536.40
3 hours labour per classroom	\$360
	\$896.40
\$49.80 per light fitting	

PAYBACK PERIOD 3.01 Years.

1. The study involved two classrooms, where 54 fourth-grade students were taking math tests. One classroom was equipped with LED lights that could be tuned to CCTs of 3500 K (which is a "warm" yellowish white), 5000 K (neutral), and 6500 K (a "cool," bluish white that mimics natural daylight). The other classroom had standard fluorescent lighting and served as a control group.

The researchers concluded that the 3500 K warm lighting may provide a relaxing environment to support recess activities, whereas the 5000 K "standard" lighting may be applied for reading activities, and 6500 K dynamic lighting supports students' performance during intensive academic activities.

http://www.huffingtonpost.com.au/entry/lighting-boost-learning-concentration_us_5720cb14e4b0b49df6a9b73e

Addendum 2.

Lynwood Senior High School Comparative Data 2015 – 2020

ClimateClever data from 2015 which is the schools baseline year, the year before any Actions were taken to reduce greenhouse gas emissions and the year before I started working at Lynwood SHS.

	Electricity	Saving PA from baseline year	Gas	Saving PA from baseline year	Water	Saving PA from baseline year
2015	\$164306		\$19,605		\$58,157	
2016	\$137503	\$26,808	\$20,624	\$1,019	\$54,753	\$3,398
2017	\$135947	\$28,359	\$15981	\$4,643 *	\$54,427	\$3,730
2018	\$135947	\$28,959	\$19484	\$121	\$66,674	\$8,517 #
2019	\$135947	\$30,526	\$17622	\$1,983	\$70,631	\$12,474
2020	\$122870	\$35,436	\$16027	\$3,578	\$72,860	\$14,703
Total Savings		\$150,088		\$9,306		\$28,566

- Electricity consumption and costs have continued to track downward since 2015. This is remarkable as many reverse cycle a/c have been installed in a number of buildings. Selective use of a/c is important, as well as running them at the recommended temperatures. Behavioural change has had a big impact on electricity use, staff are to be commended on their ongoing engagement by turning off appliances every day and when not in classrooms. A LED upgrade has been running for 4 years now and almost all lighting is now LED, this saves 50% of energy use on lighting. Staff turn off computers and other appliances every day.
- The school also has a Holiday Switch Off process, fridges, hot water boilers, hot water systems, chilled drinking fountains etc are all switched off.

- * Gas was turned off mid 2017 while a leak was repaired. The whole building Science block gas heater has been removed and replaced with reverse cycle a/c. The Holiday Switch has also contributed to gas savings.
- # Water consumption and costs have continued to track upwards since 2018. I have attempted to address this by liaising with WaterCorp. For a couple of years, we had a data logger on the main meter, this was provided by WaterCorp, this gave detailed information on the time of day when leaks occurred. I have commissioned two Water Audits, May 2018 and again in December 2020. These provided a list of remediation actions, the majority related to repairs which have been undertaken. Flow reducers have now been installed on most water appliances in the school.

LSHS water consumption is 19L/person/day, which compares favourably with 20-50L/day for other schools (comparing schools is imprecise due to the great variation of infrastructure i.e. pool, bores, gyms etc).

The most recent Water Audit identified a major leak at the meter which was repaired the next day. Ongoing leakage of 4.4kl per day was also noted, this costs LSHS approx. \$8,400. *EAW Consulting Report*
Kathy Anketell 4.4.2021

Addendum 3.



Sustainability and Climate Action

Policy



Policy Statement

Lynwood Senior High School will maintain its focus of sustainability through minimising carbon emissions from existing and new school operations.

Sustainability related content, and/or practices will be embedded in all learning areas and across all year groups.

The implementation of the sustainability focus will be supported through a dedicated Sustainability Program Coordinator appointed to the school, working with students and staff and meeting regularly with the Sustainability Committee.

Rationale

Climate change is the pre-eminent global concern and human activities such as energy use, travel and landfilled waste is a serious issue of mounting international and local concern. South-west Western Australia is identified to be seriously affected by reduced rainfall and rising temperatures within the lifetime of the current students. The school can substantially reduce its contribution to climate change through demonstrating leadership both within the school and seeking to work with other schools.

Background

In 2008 the decision was taken to set “sustainability” as the school focus to provide a defining direction and a sense of belonging and identity. A key action was to re-badge the school as a “Centre for Environment and Life Sciences”. A leadership role was created in 2012, with the Head of Curriculum guiding staff in highlighting the focus on sustainability teaching across the school. Two new pathways for students were created in 2011; a senior school engagement program, the Lynwood Environmental Academic Flexible Learning (LEAF) Program and in 2012, a specialist academic program, Environment and Life Sciences (EaLS).

Sustainability is embedded in actions plans across the whole school, in both teaching and non-teaching areas. It is steered by the Sustainability Committee (SC) which meets at least twice a term. The SC is open to all members of the school community as well as local community members and academics. Since 2016 a part-time Sustainability Program Coordinator has been employed to drive climate change and sustainability initiatives at the school. The position was initially funded through the school staff budget allocation and later with savings from sustainability energy and water initiatives.

Reductions were initially identified through a School Greenhouse Audit in 2016 and many of these and new initiatives have been implemented under the project.

Policy - Key Elements

To achieve the policy, the following key elements are essential:

1. Continue to seek and implement emission reduction opportunities:
 - a. Plan to replace lighting, refrigeration and heating to more efficient units through grants or budget allocations
 - b. Retain a waste contract that enables recycling and composting
 - c. Incorporate environmental purchasing criteria (see AuSSI checklists) including
 - i. procure energy efficient appliances when new equipment is required with a star rating of 3 ½ stars or higher
 - ii. Request Carbon Neutral or local and recycled product options when procuring items for the school
 - d. Consider energy efficiency and sustainability in all major works on school buildings and facilities with a green star rating
 - e. Reduce greenhouse gas emissions from fuel use in transport through fuel efficient vehicle purchases and transport choices, encouraging staff to bus, train, walk or cycle to school, and purchasing offsets for air travel.

- f. Continue to support related initiatives such as tree planting at the school and off-site as well as the LEAF, Ngalark Karlup, Aquaponics and Bush Tucker Gardens and which demonstrates low carbon food production.
2. Communicate with new and existing staff and students through induction (see later), staff meetings, professional learning opportunities and signage.
3. Continue participation in the ClimateClever Program to monitor and record utility use and subsequent emissions.
4. Embed content, concepts or practices into all learning areas, eventually creating a Sustainability Curriculum Overview.

Sustainability Program Coordinator

The Sustainability Program Coordinator will be responsible for;

- Leading the implementation of key elements of this policy, supporting staff where necessary and liaising with school leadership regarding the teaching and learning and facilities impacts.
- Ensuring an annual carbon audit is undertaken via the ClimateClever App.
- Leading the emissions reduction measures within the school.

Induction of new staff to the Sustainability Committee

All new staff will be provided with an outline of the Sustainability Program summary and an invitation to join the committee.

To foster climate change and sustainability at the school amongst staff, the following practices are outlined for all staff to adopt. They may be delivered through individual conversation, group presentation, and prompted with complementary signage. In addition, the SC will regularly provide information and professional learning to staff in order to provide current research and practices.

Sustainability Actions for All Staff

1. Water saving in the school

If you see signs of water leakage on school grounds, whether in the gardens, rooms, pool or toilet/shower blocks Report leaks immediately to the Manager of Corporate Services (MCS).

1. Sustainable procurement

When you are looking to purchase equipment or stationary supplies, incorporate the environmental purchasing checklist recommended by AuSSI (see <http://www.environment.gov.au/sustainability/government/purchasing/index.html>).

When purchasing office equipment consumables consider, in addition to price:

- The goal of reducing overall waste and using fewer resources
- Low environmental impact packaging
- Additional environmental benefits documented by the company
- Don't forget to use the Common Use Agreement (CUA)

Paper and cardboard

- High Australian recycled fibre content (and/or Carbon neutral certification)
- Made from the lightest weight paper acceptable for the job
- Manufactured using EPA licensed effluent systems
- Manufactured in facilities that perform better than required by licencing standards
- That do not have non-recyclable coatings
- With low environmental impact packaging

It is the responsibility of all staff to check for carbon neutral, local or low energy alternatives for products being procured.

2. Waste separation

The school has 22 waste streams; see attachment 1.

In all places at the school appropriate waste separation is required into the bins provided.
This is to minimise waste to landfill, waste of resources and reduction of greenhouse emissions.

Contact Sustainability Program Coordinator or MCS if there are any issues.

Sustainability Actions for Teaching Staff

Classroom and office practices:

Energy Saving

- Turn off lights and fans when each class is over.
- Evaporative coolers – leave windows open where students and staff are to direct cool air flow this way. Lowering the fan speed makes a big difference in energy use so keep the fan down when you can.
- Reverse cycle a/c will have a temperature setting of 20o in winter and 26o in summer. Australian Government recommendation is that there is a maximum of 10o difference between inside and outside temp.
- Turn off your computer at the end of the school day and choose power saving or switch off in between times
- Fridges - switch-off for summer holidays, minimise number of fridges and avoid small fridges (there is little or no energy saving compared to a large fridge/freezer). Also remember a full fridge works most efficiently and if there is ice build up, a defrost is needed.
- Hot water systems - gas storage in Hospitality classrooms and Gym will be turned off during school holidays. Other electrical systems need to be left on as per the operating manual.
- Gas heaters - pilot lights will be turned off at the end of term 3 and relit no earlier than term 2.

Waste separation system –

- Each classroom and office should have at least 1 paper & cardboard recycling bin and 1 mixed rubbish (landfilled) bin. These are emptied by daily by cleaners.
- In hospitality classrooms, food waste also needs to be collected and deposited in the Green Cone.

Waste minimisation -

- As a default, use double-sided printing of paper where available on a printer.

Students

- A Student Sustainability Squad was established in 2019 this is a student lead group which will decide on activities and actions as they see fit (Access 10)
- Students are rostered to manage the plastic bottle recycling Greenbatch bins.
- EALS students manage the LSHS Community Recycling Station in liaison with the Sustainability Program Coordinator.
- LEAF students fresh produce is sold to staff from LEAF garden and aquaponics – this reduces greenhouse emissions for food miles as it is locally grown and organically grown.

Administrative Staff

- Incorporate environmental criteria into the purchasing of office equipment and consumables as stated in the Policy.
- Minimise waste through paper and cardboard recycling in Administration and minimise paper use through double sided printing and judicious printing of notices.

Horticultural Staff

- Water saving practices in keeping with this policy intent from water-wise plant choices and garden designs to efficient irrigation equipment and timing,
- Make use of green waste skip bin for garden waste.
- Undertake holiday switch-off of hot water systems and boilers and water cooler fountains at end of each term to eliminate energy wastage.

Canteen staff

- Separate waste including kitchen waste for home composting or chicken food.
- Holiday switch-off of fridges, freezers and cool room (if possible). Minimise number of fridges/freezers, avoid small fridges (there is little or no energy saving compared to a large fridge/freezer) and undertake regular defrost where needed to optimise efficiency.

Cleaners

- Regularly liaise with Sustainability Program Coordinator to ensure that, recycled or CN paper products are used and waste is separated into the appropriate skip bins i.e. paper & cardboard, general waste and green waste.
- Turn off lights, heating and cooling systems in classrooms and office if left on.

HOLAs

- Holiday switch-off in learning areas of fridges, computers, overhead projectors and other electrical equipment.

Addendum 4.

LYNWOOD SHS RECYCLING PROGRAMS 2020

	WASTE STREAM	LOCATION	MANAGED BY	\$+	ANY ISSUES MANAGED BY
1	<ul style="list-style-type: none"> • Paper and cardboard 	<ul style="list-style-type: none"> • Bins & bins in offices & classrooms • Skip bin rear of school 	Cleaners Access 10 -Teacher School Gardener		Sustainability Program Coordinator Teacher Access 10 Manager Corporate Services
2	<ul style="list-style-type: none"> • Green waste 	<ul style="list-style-type: none"> • Skip bin rear of school 	School Gardener		Manager Corporate Services
3	<ul style="list-style-type: none"> • Metal Recycling <p>ON HOLD DUE TO BUILDING WORKS</p>	<ul style="list-style-type: none"> • Skip bin rear of school 	Head of Design and Technology	Y	Sustainability Program Coordinator
4	<ul style="list-style-type: none"> • Container Deposit Scheme – P&C 	<ul style="list-style-type: none"> • Cage on perimeter fence rear of school 	P&C	Y	P&C
5	<ul style="list-style-type: none"> • Food waste from canteen • Food waste Home Ec • Food waste Staff room 	<ul style="list-style-type: none"> • Canteen –taken home for chooks • Green Cone in Home Ec garden • LEAF Garden Compost Bins 	Canteen Staff Home Ec Assistants Access 10		Canteen Manager Teacher Home Ec Sustainability Program Coordinator
6	<ul style="list-style-type: none"> • Co-Mingled recycling - yellow top bin in the staff room 	<ul style="list-style-type: none"> • Outside Staffroom • Outside back of Canteen 	Cleaners		Head Cleaner & Sustainability Program Coordinator
7	<ul style="list-style-type: none"> • Tea bag string (for a craft group) 	<ul style="list-style-type: none"> • Staffroom kitchen bench 	Education Assistant		Sustainability Program Coordinator
8	<ul style="list-style-type: none"> • Bread Tags (for wheelchairs) 	<ul style="list-style-type: none"> • Staffroom kitchen bench • Canteen • Home Ec 	Sustainability Program Coordinator		Sustainability Program Coordinator

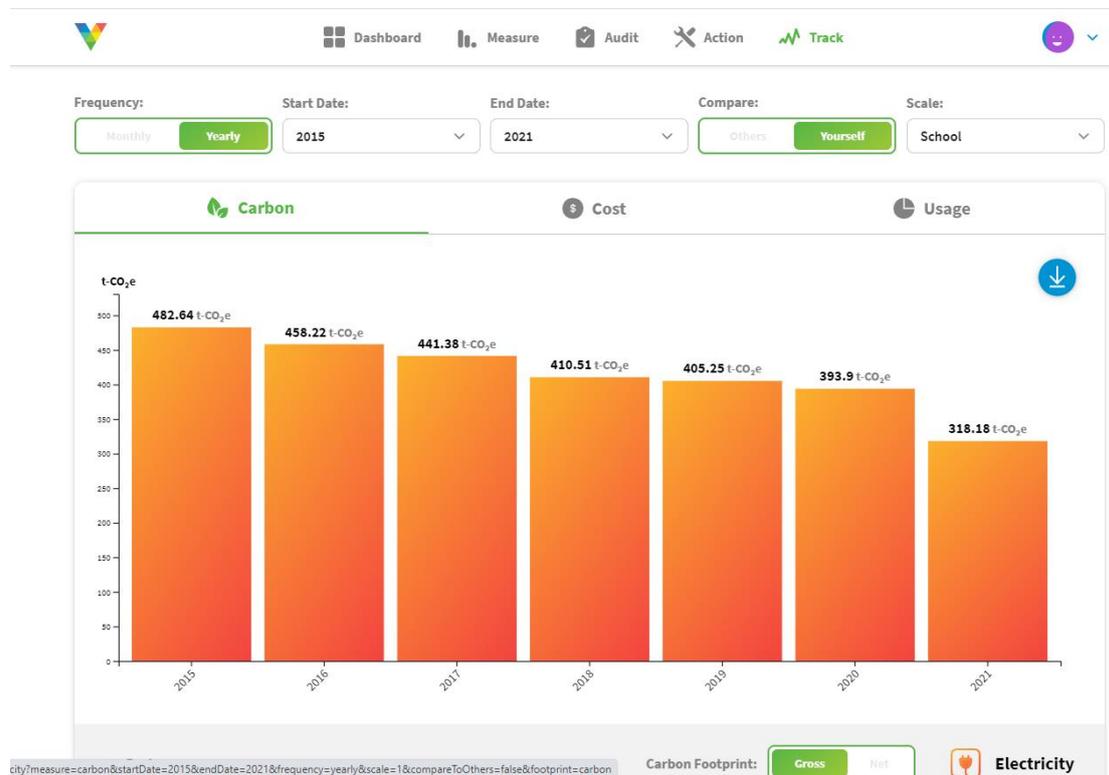
9	<ul style="list-style-type: none"> ● Marker pens, pencils and pen recycling box 	Staffroom – near pigeon holes	Sustainability Program Coordinator		Sustainability Program Coordinator
10	<ul style="list-style-type: none"> ● Batteries – recycling station 	<ul style="list-style-type: none"> ● Community Recycling Station 	Y7s & EaLS Coordinator		Sustainability Program Coordinator
11	<ul style="list-style-type: none"> ● Mobile phone 	<ul style="list-style-type: none"> ● Community Recycling Station 	Y7s & EaLS Coordinator		Sustainability Program Coordinator
12	<ul style="list-style-type: none"> ● Coffee pods 	<ul style="list-style-type: none"> ● Community Recycling Station 	Y7s & EaLS Coordinator	Y	Sustainability Program Coordinator
13	<ul style="list-style-type: none"> ● Toothpaste tubes and brushes 	<ul style="list-style-type: none"> ● Community Recycling Station 	Y7s & EaLS Coordinator	Y	Sustainability Program Coordinator
14	<ul style="list-style-type: none"> ● Dishwashing Products 	<ul style="list-style-type: none"> ● Community Recycling Station 	Y7s & EaLS Coordinator	Y	Sustainability Program Coordinator
15	<ul style="list-style-type: none"> ● Soft Plastics 	<ul style="list-style-type: none"> ● Library Back Office 	Teacher Librarian		Teacher Librarian
16	<ul style="list-style-type: none"> ● Contact Lens Products 	<ul style="list-style-type: none"> ● Library Back Office 	Teacher Librarian		Teacher Librarian
17	<ul style="list-style-type: none"> ● Mice, cables, DVD, CD,USB 	<ul style="list-style-type: none"> ● Library Back Office 	Teacher Librarian		Teacher Librarian
	<ul style="list-style-type: none"> ● Dental Products 	<ul style="list-style-type: none"> ● Library Back Office 	Teacher Librarian		Teacher Librarian
18	<ul style="list-style-type: none"> ● Good Sammy Bin 	<ul style="list-style-type: none"> ● Outside Staff Room 	Admin Support Officer		Sustainability Program Coordinator
19	<ul style="list-style-type: none"> ● Printer cartridges 	<ul style="list-style-type: none"> ● Admin photocopy room 	Admin Support Officer		Admin Support Officer
21	<ul style="list-style-type: none"> ● Fluor ballast recycling 	<ul style="list-style-type: none"> ● Locked switchboard room - admin 	Sustainability Program Coordinator		Sustainability Program Coordinator
22	<ul style="list-style-type: none"> ● GreenBatch - Plastic bottle recycling for 3d printer filament 	<ul style="list-style-type: none"> ● 4 bins across the school 	EaLS all year groups, Kim-Teacher Science		Sustainability Program Coordinator
23	<ul style="list-style-type: none"> ● Smelting aluminium cans and making new 	<ul style="list-style-type: none"> ● D&T 	Teacher Design and Technology		Head of Design and Technology

	screw driver handles				
24	<ul style="list-style-type: none"> E Waste Recycling 	<ul style="list-style-type: none"> IT Room 	Head of IT		Head of IT
25	<ul style="list-style-type: none"> X-Ray Recycling Annually 	<ul style="list-style-type: none"> Staff Room 	Kathy Anketell		Sustainability Program Coordinator
26	<ul style="list-style-type: none"> Ring Pulls 	<ul style="list-style-type: none"> Staff Room 	Kathy Anketell		Sustainability Program Coordinator

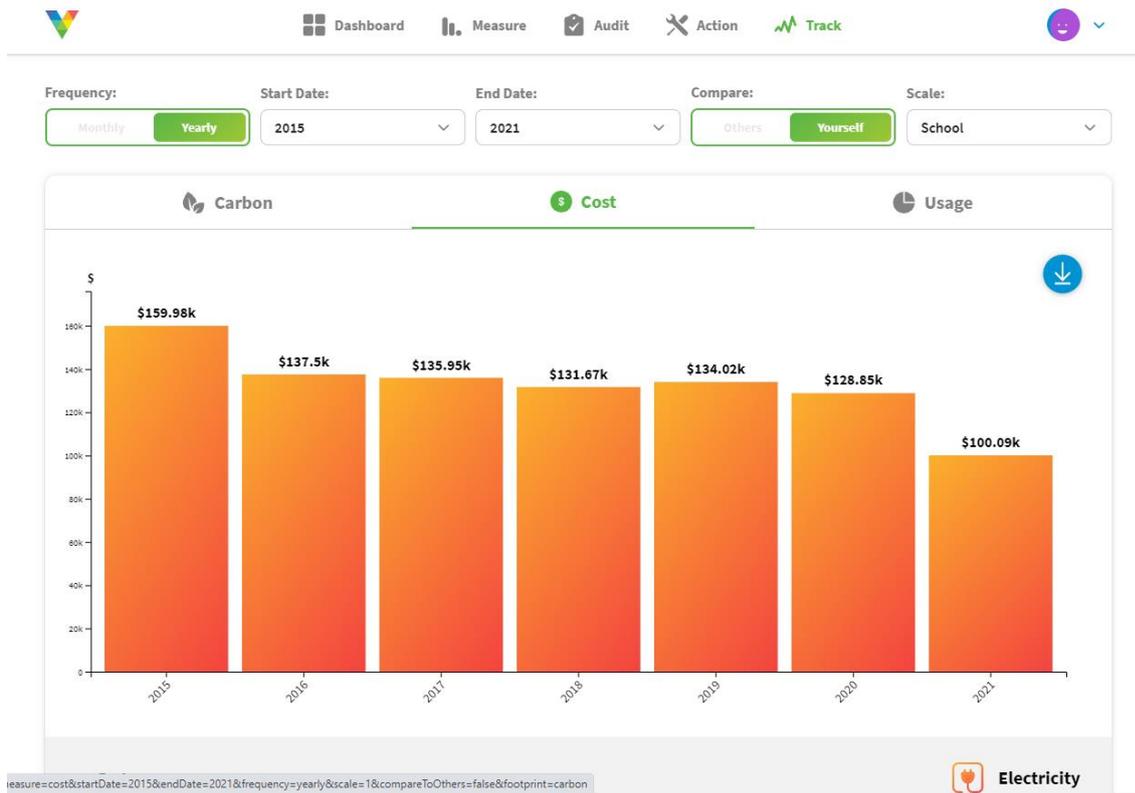
Lynwood Senior High School ClimateClever Data 1.10.2021

- 2015 is the baseline year i.e. the year before started taking Action to reduce greenhouse emissions.
- Electricity data covering all three data sets; Carbon, Cost and Usage. The large cost saving between 2015 and 2016 was due to renegotiating with the energy provider and staff turning things off at the end of the day and during school holidays.
- Three years of electricity monthly data FYI
- Waste Data wasn't available from Suez until 2017, spikes are often due to building work and extra skips being required.
- Gas – great savings in 2017 as the gas was turned off for 6 weeks over winter while a gas leak (of 10+ years!!) was being fixed.

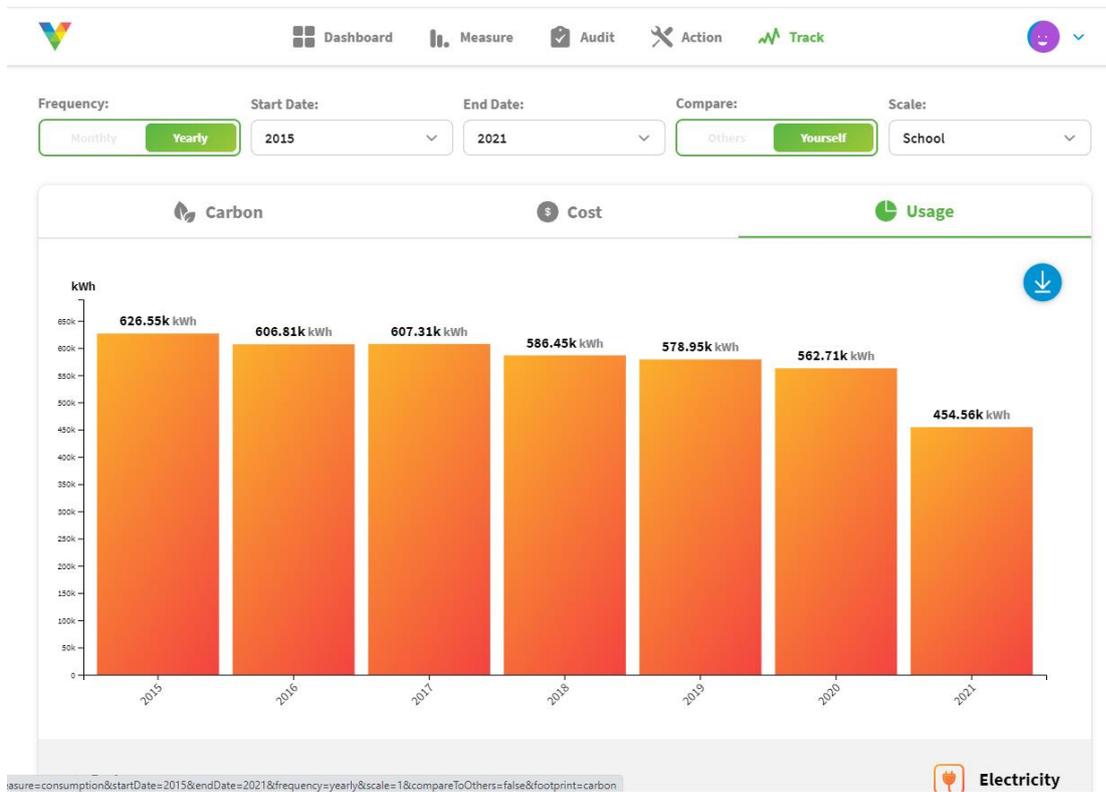
CARBON - Electricity data



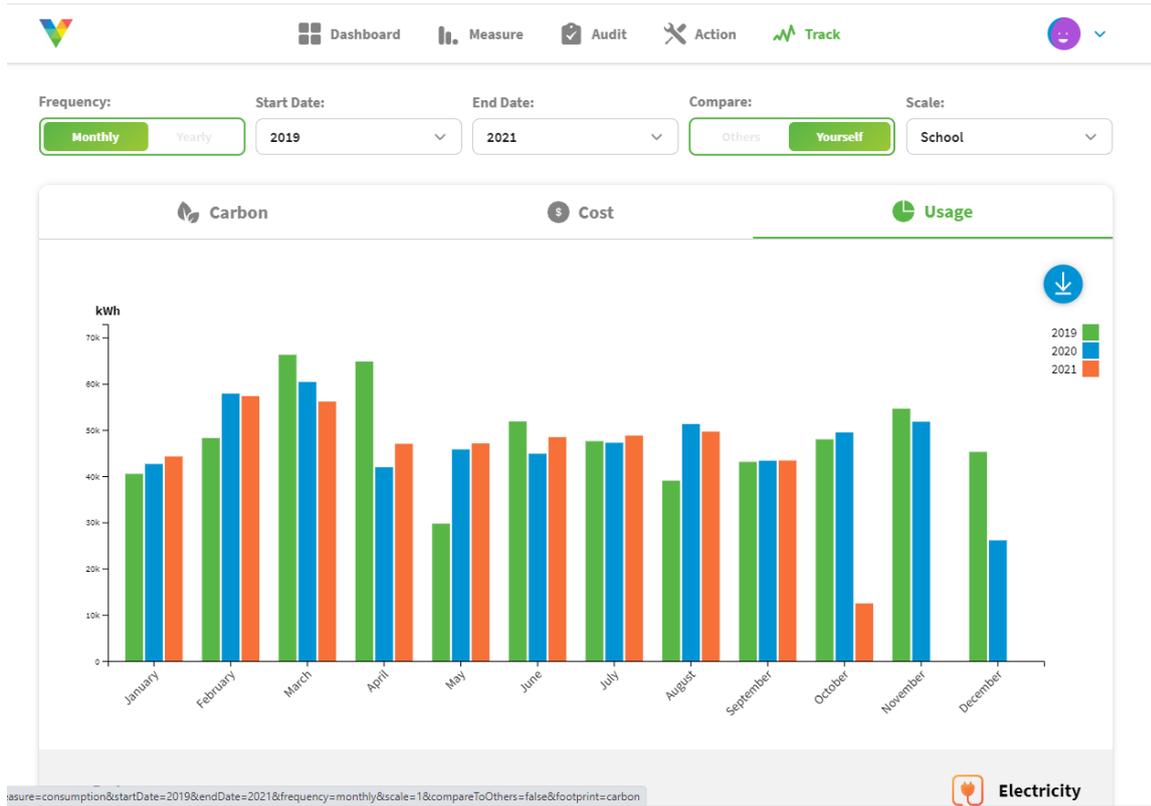
COST - Electricity data



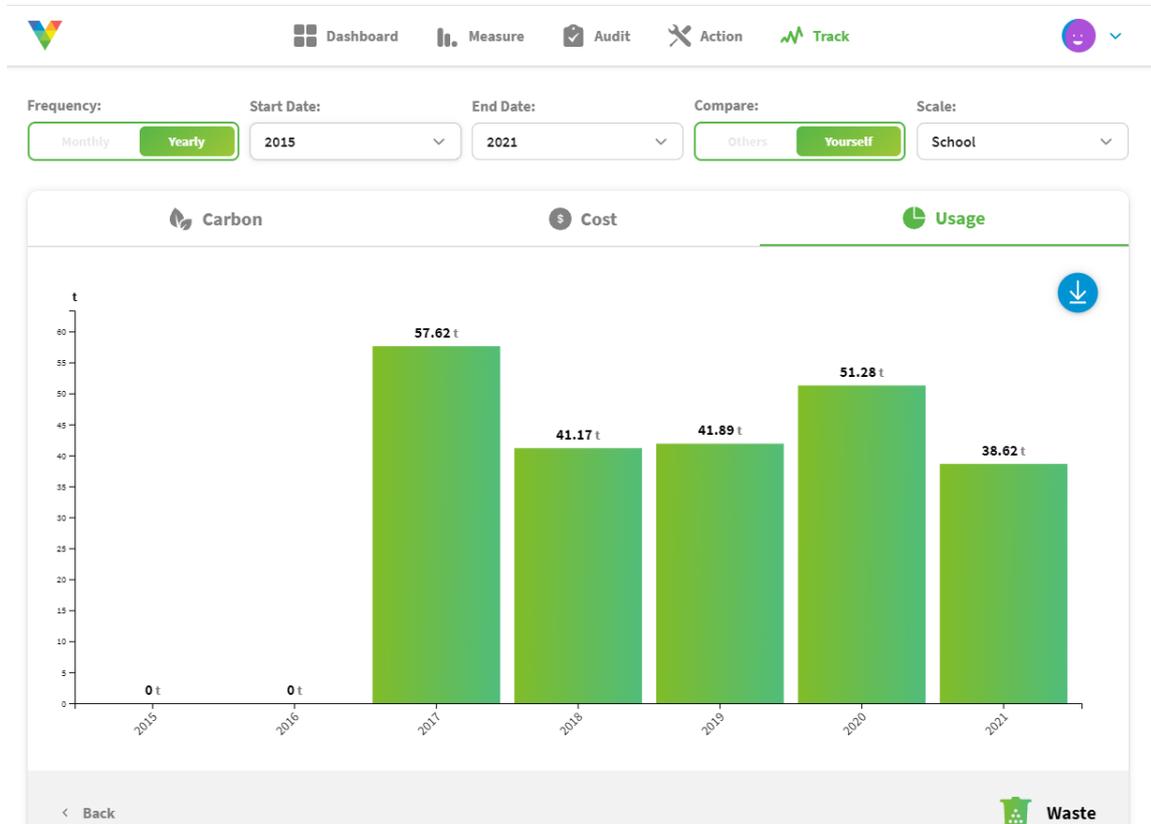
USAGE - Electricity data



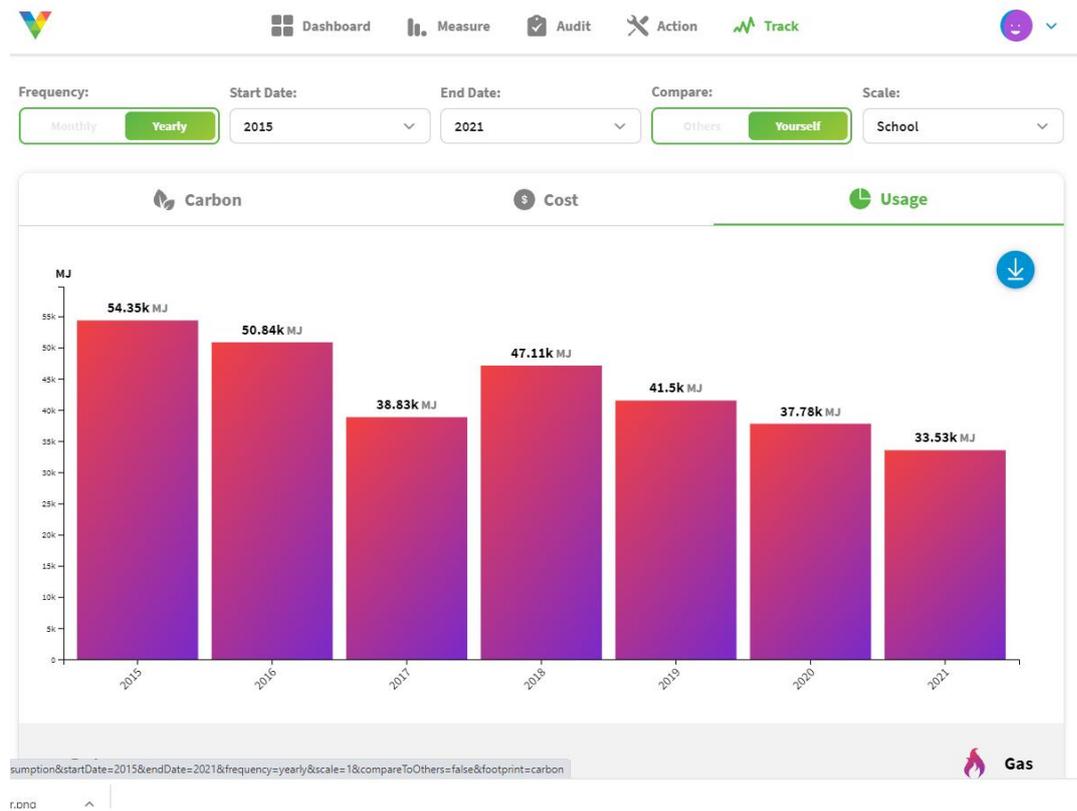
USEAGE - Electricity data - Monthly



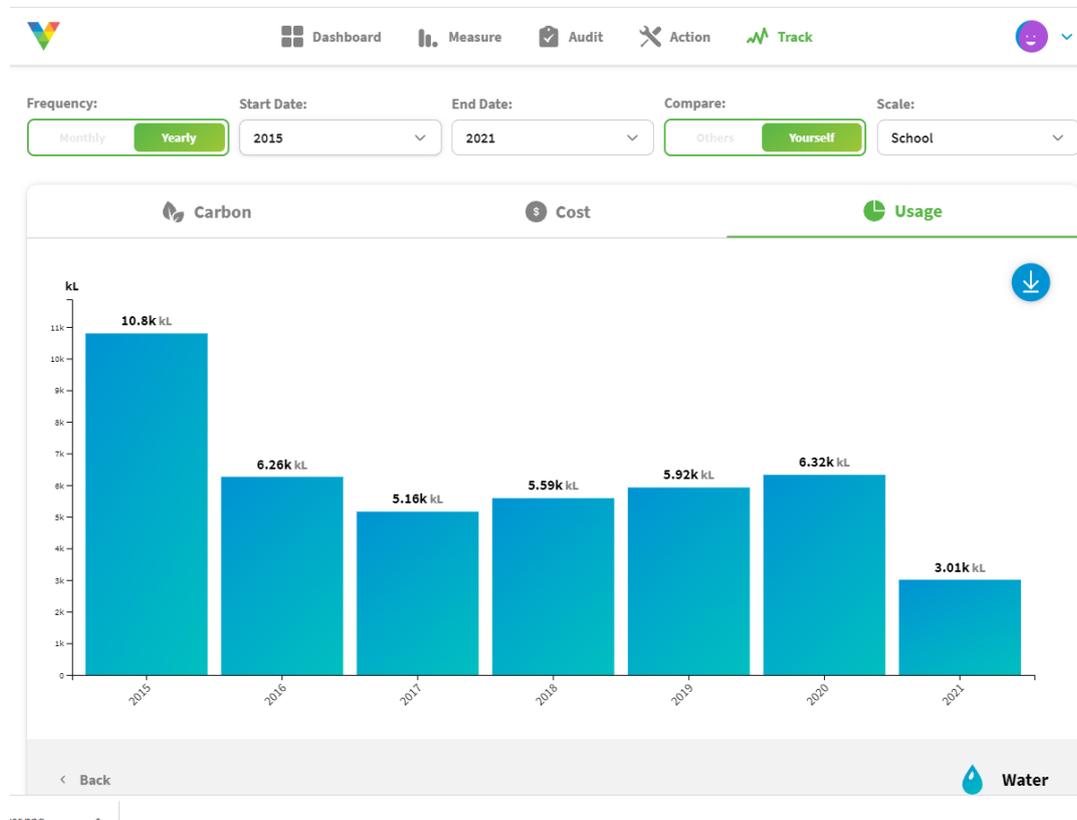
USEAGE - Waste



USEAGE- Gas

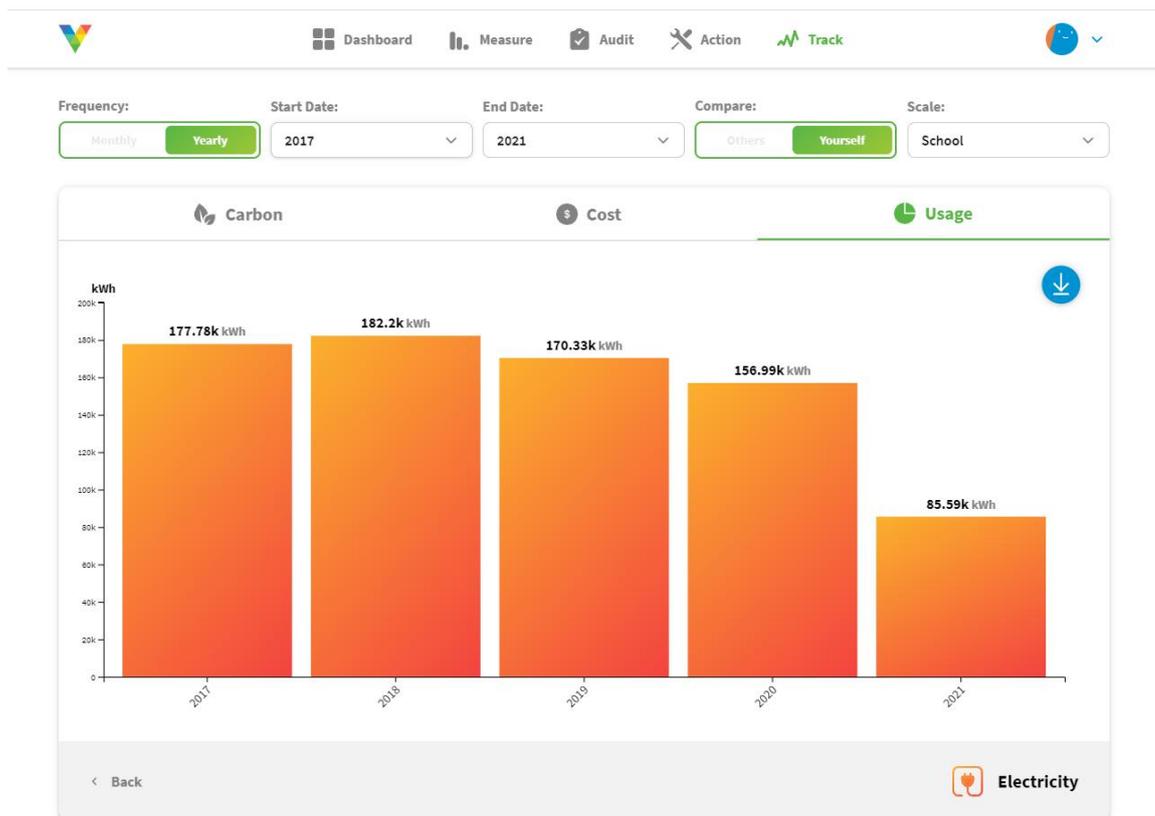


USEAGE – Water



Beeliar Primary School ClimateClever Data 1.10.2021

- Beeliar PS no longer has gas, it was removed in 2018 and replaced with reverse cycle air con
- The fact that electricity use continues to decline in spite of the above demonstrates excellent site management. Air conditioning is used judiciously, on mild days overhead fans are used and windows opened to maintain classroom comfort.
- Water data is being checked as either there is a data entry issue or there is a significant leak. The ClimateClever App enables the school to identify anomalies and follow up with Water Corp or BMW.





Dashboard

Measure

Audit

Action

Track



Frequency:

Monthly **Yearly**

Start Date:

2017

End Date:

2021

Compare:

Others **Yourself**

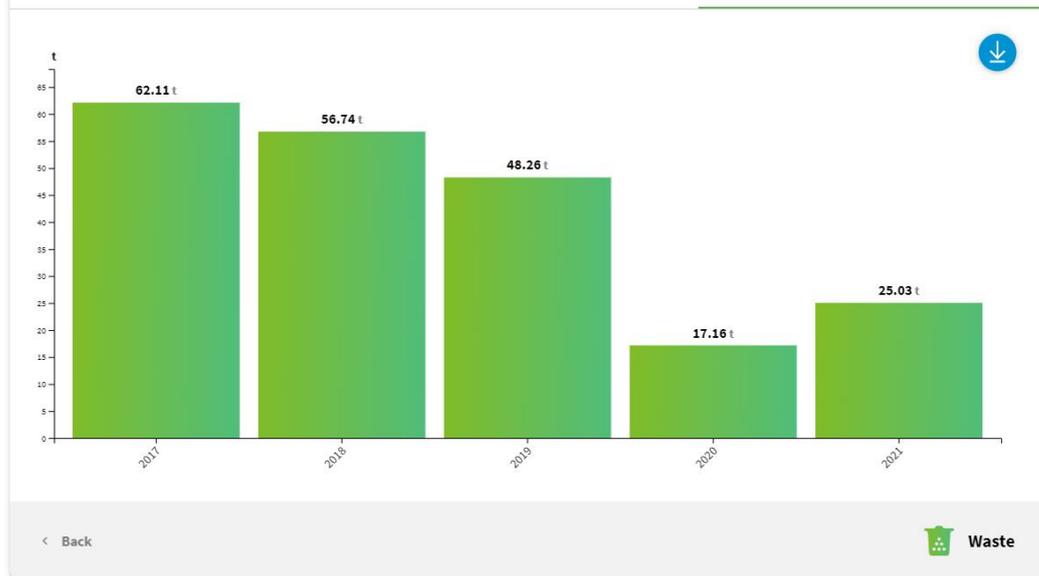
Scale:

School

Carbon

Cost

Usage



Dashboard

Measure

Audit

Action

Track



Frequency:

Monthly **Yearly**

Start Date:

2017

End Date:

2021

Compare:

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Scale:

School

Carbon

Cost

Usage

