Supporting Sustainability at St Thomas **Electricity and Emission Savings, Solar Feasibility, Educational Engagement UPDATE FROM MARY HARE**

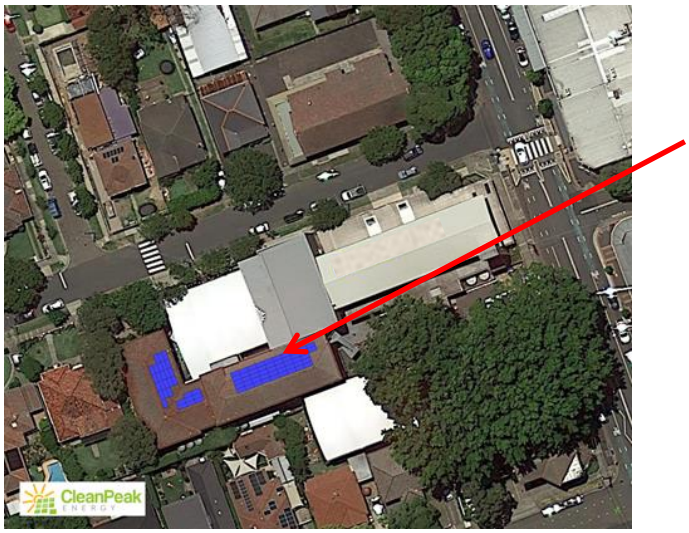
To support St Thomas' sustainability education and actions I offered to start an energy audit and take a closer look at electricity use and the potential for solar panels. See also the regional benefits that have come about from the project. Much of the work will be done in 2020 and this is my first update.

Initial Cost-Benefit Scenario for 35 KW system at St Thomas

Our position looks very good to go ahead next year with a solar system thanks to the price of panels coming down, our electricity profile and rates, available space for panels and the federal government incentives through the Solar Credit's program. I have recommended a 35 kW solar panel system. This comes with benefits both financially and for the environment in terms of significant cost and emissions reductions.

The cost of a 35kW system is around $35,000 and the savings per year for the school range around $8-10,000 per annum. Taking into consideration 36% of what is produced at St Thomas will be exported and money generated from the feed-tariff from electricity exported (around $1,700) the payback for the school could be as little as 3.5 to 5 years.

Position of Solar Panels



With the 150 sqm roof area that is available on the primary school north and east facing roofs we can fit the 87 panels to produce 35 kW. This system will supply most of the school's day time needs.

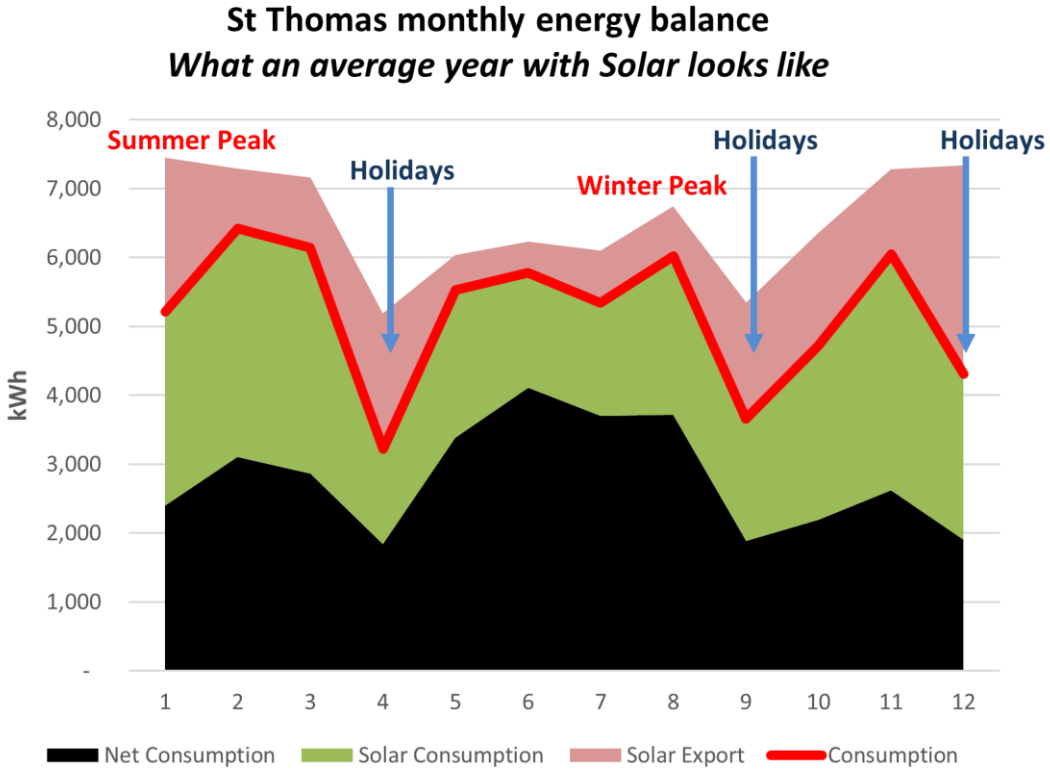
St Thomas will be taking 7 average houses worth of electricity off the grid

Presently St Thomas Primary School's electricity usage is equivalent to 10 average Australian homes energy use for one year. An average Australian household uses 6,000 kWh per annum. After the proposed solar 35KW is installed and up and running, St Thomas will be taking away about 7 average

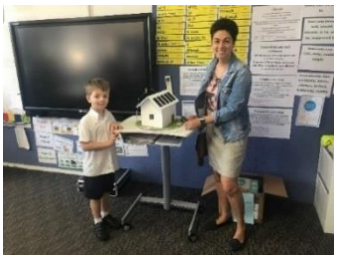
homes worth of electricity costs and carbon emissions which is equivalent to 38,597 kg $C0_2$ per annum.

Engagement with Staff and Students

The results compliment the teacher's work on sustainability by providing examples from our *own* school. From the school's own energy use profile much can be learnt about energy and emissions costs and savings and in particular relating this to seasonal changes, technology and behaviour.



Stem Week: This year it was a pleasure to present again to year 4 on the sun, energy use in your home and solar assessment. We discussed the school's own energy use and potential for solar in relation to the position of the buildings. Here you can see a model of a house my children Penelope (Yr 5) and Sebastian (Yr 2) help me build. It includes a couple of wire coat hangers to illustrate with yellow buttons the trajectory of the summer and winter sun and help the children think about where does the sun rise and set in relation to your own house and throughout the seasons!



As part of STEM week with their teachers students examined an electricity bill in maths classes to gain a practical understanding of maths around kWh, costs and savings.

Benefits to schools in Broken Bay Diocese

In September this year the Broken Bay Catholic's School Diocese office was contacted by the SMH to see what the regional body is doing in the solar space. The BBCSO has said that our experience here at St Thomas will feed into Diocesen wide energy and solar policy. There is a broader community interest in what Catholic schools are doing in this space and our combined efforts will help to reduce further costs and emissions.

Energy Audit offered by Willoughby Council to St Thomas – now offered to all local schools

I contacted Willoughby Council to see if they could assist in any way and they have offered a private company ChargeWorks to conduct an energy audit of the school to the value of $3,000. This energy audit offer was initially set up for St Thomas and then was rolled out to all schools in the Willoughby Council area.

The first walk through audit will happen this Thursday 5 December with Chargeworks so you may see us around. I will subsequently take some students for another walk through audit.

Transport and waste audits

In 2020 we plan to look at emissions sources at the school from waste by doing a waste audit and also from transport by conducting a student transport survey. This way any positive actions can be quantified. This has also led me to meet with Catherine Judd, Education Officer Sustainability at Broken Bay Catholic Schools who also works with our senior environment team and she has asked to be included in our energy, waste and transport audits.

Parent and family Engagement – Film night *2040*

To complement the sustainability work being done at the school in energy and solar stay tuned for an upcoming parent film night of the climate awareness raising film *2040*. It was released in August 2019 by Damon Gameau from the highly successful *That Sugar Film* fame.

The film night will take place in March 2020 so watch this space!