

Solar Energy

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What is solar energy / solar panels?

Solar energy is radiant energy from the Sun's light and heat that can be captured and converted into usable forms like electricity and heat using technology.

Solar energy can be used in many different ways such as charging electronics and using daily essentials such as a cookers, microwaves and much more...

Solar panels are panels that are made of solar cells sometimes form silicon which is found in sand and the solar panels are there to help us reduce energy that we as a school use.



How do solar panels work?

Solar panels work when they absorb the light particles from the Sun- also known as photons.

They are made of many solar cells, sometimes from silicon which is found from sand.

When sunlight finally hits the solar panels and solar cells, it excites electrons forming an electrical current.

Solar panels are good for the planet since they don't create any pollution or any type of harmful gas.

Using solar panels can reduce your electricity bills because the Sun's energy is free.

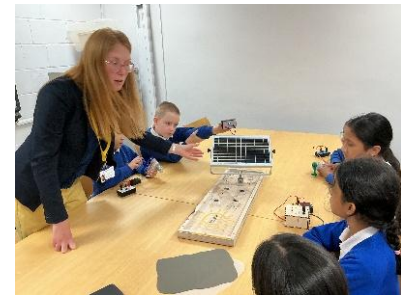
The Sun provides energy that won't run out for billions of years unlike coal or oil.

What we did

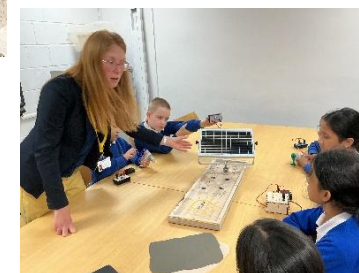
We had a meeting with Wendy who came in and talked to us about solar energy and how it is used.

We looked at a miniature solar panel and described its features. Then we dressed up as the people who install and design solar panels.

We looked at graphs of our school and how much solar energy we used over the days and months (we discovered that there's energy being used at night as well.)



Pictures



Solar Energy Information Video

- ▶ [HTTPS://YOUTU.BE/K93NCLB6IBG](https://youtu.be/k93NCLB6IBg)
- ▶ WHAT IS SOLAR POWER

- ▶ [HTTPS://YOUTU.BE/IDEGOKFEeP4](https://youtu.be/IDEGOKFEeP4)
- ▶ SUN POWERED SCHOOLS

- ▶ [HTTPS://YOUTU.BE/JSULYFQEAXA](https://youtu.be/JSULYFQEAXA)
- ▶ WHAT IS NATIONAL GRID

How much solar energy has been used?

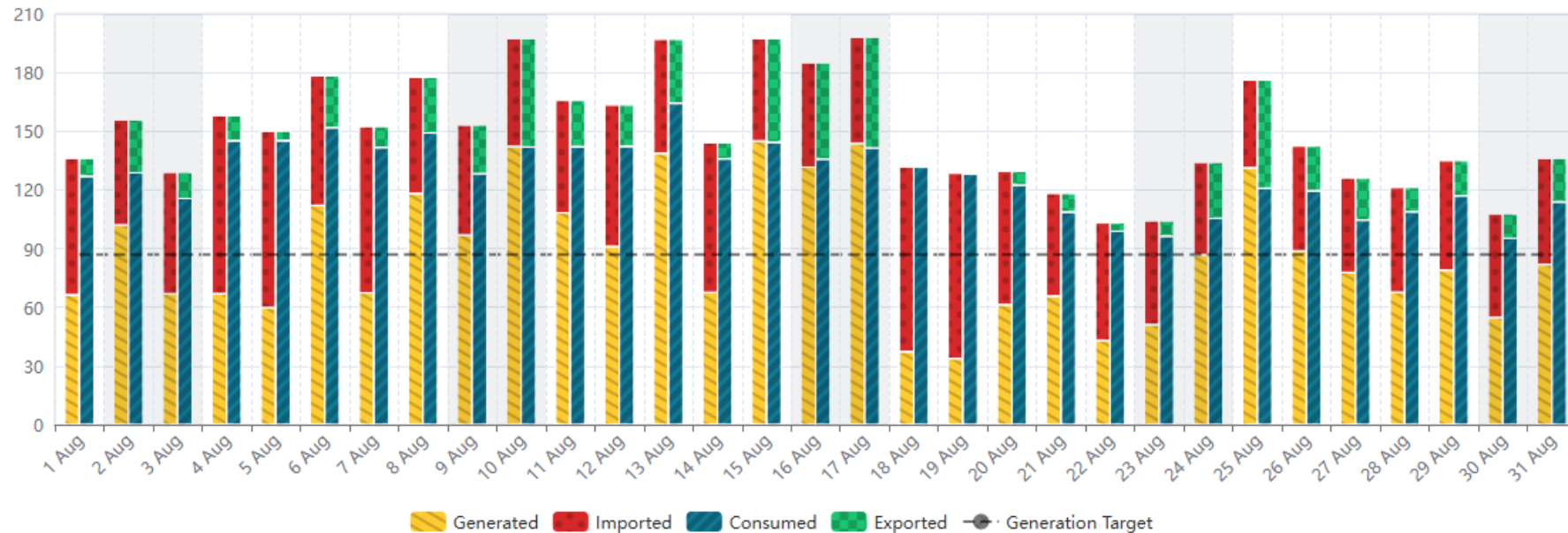
This is an outline of how much energy has been used in our school every month.

Month	Generation (MWh)	Import (MWh)	Export (MWh)	Consumption (MWh)	Self Consumption (MWh)
2024-Sep	1.19	0.06	0.68	0.56	0.51
2024-Oct	0.84	0.12	0.44	0.52	0.4
2024-Nov	0.23	0.13	0.37	0.22	0.09
2024-Dec	0.11	88.97	0.15	88.96	0.11
2025-Jan	0.2	5.58	0	5.68	0.2
2025-Feb	0.5	4.46	0.01	4.95	0.49
2025-Mar	1.68	4.23	0.11	5.8	1.57
2025-Apr	2.67	2.67	0.42	4.93	2.26
2025-May	3.1	2.84	0.34	5.6	2.76
2025-Jun	2.63	3.42	0.19	5.86	2.44
2025-Jul	2.96	2.99	0.4	5.55	2.56
2025-Aug	2.68	1.95	0.68	3.95	2

The month we generated the most solar energy was July

The month we generated the least solar energy was December

Statistics for the month of August



Some facts about the month of August

We generated the most solar energy on 15th August during this month.

We imported the most energy on 18th August that month.

We did not use any imported energy on the 10th, 16th, 17th of August.

Further Analysis of the month of August

- ▶ Our energy generation target was between 71.39-86.96kWh per day.
- ▶ We succeeded in generating this amount of solar energy on the 2nd, 6th, 8th, 9th, 10th, 11th, 12th, 13th, 15th, 16th, 17th, 24th, 25th and the 26th August.

In summary, in the month of August we:

Generated

2.7 MWh of solar energy

Worth

£564 at 21 p/kWh per unit

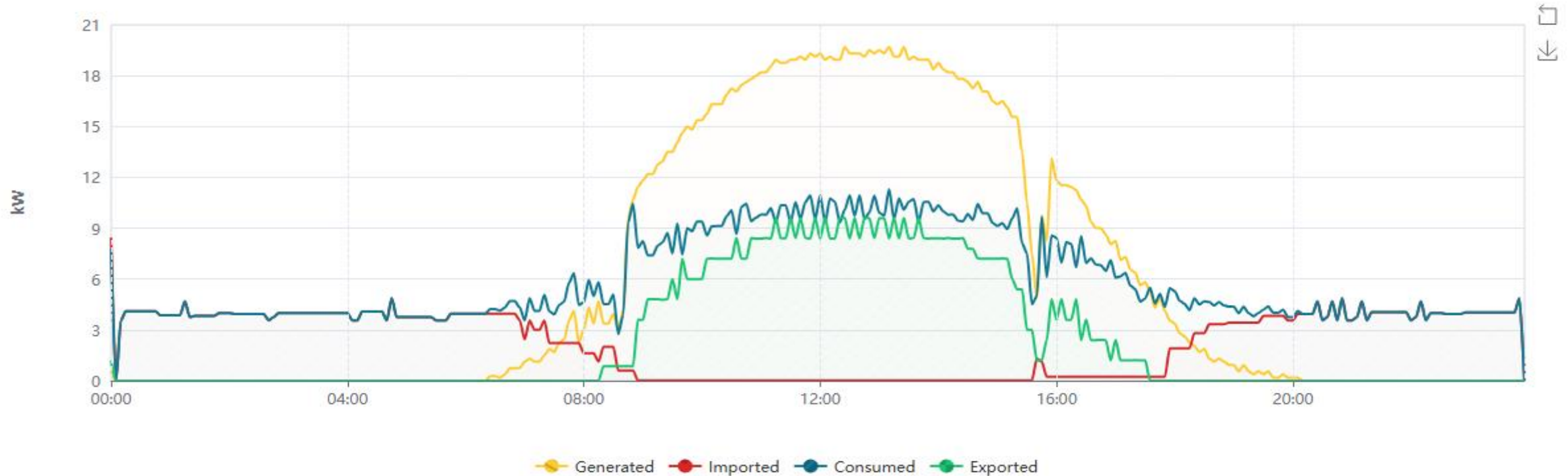
Stopping

612 kg of CO₂ emissions

Equivalent to

45 EVs charged

Arising question....



We noticed that energy is being used during the night... We wonder what this could be?

When is the most solar energy used?

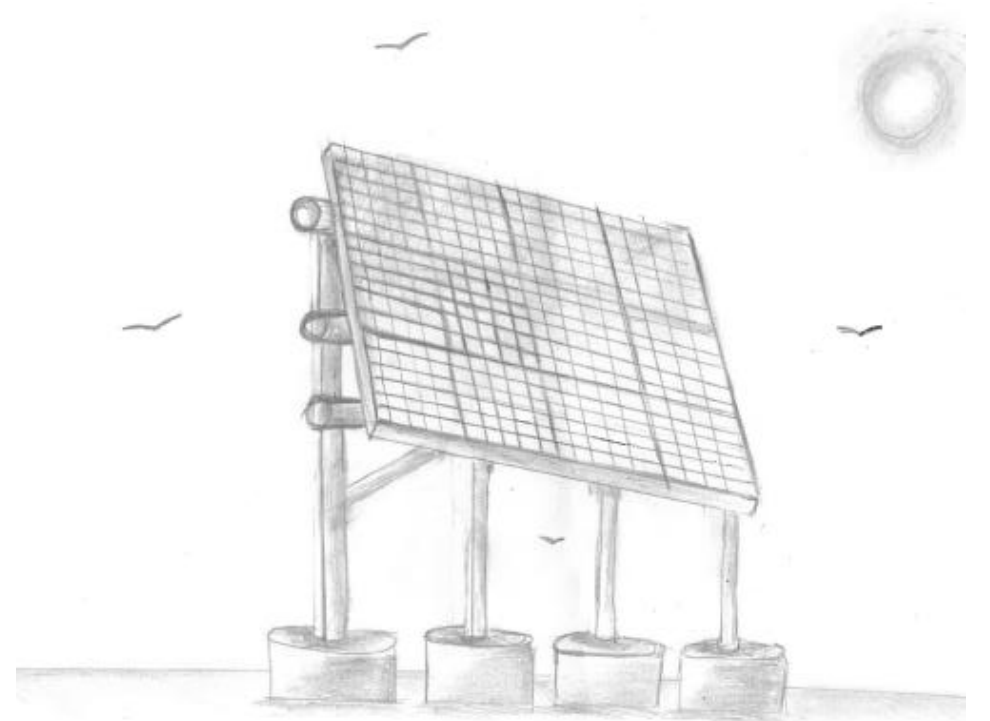
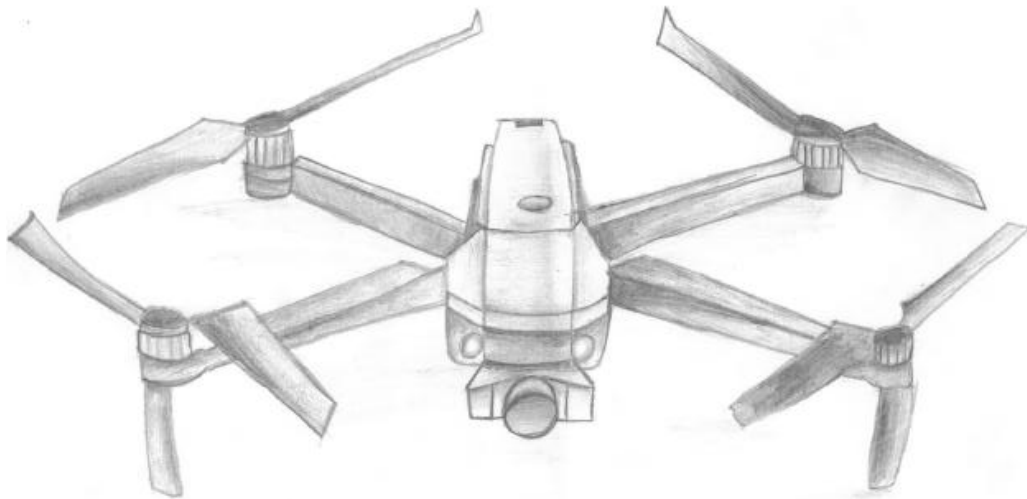
The most solar energy is used on sunny days because the energy that we use is all solar energy which is basically energy that solar panels have extracted from the Sun.

solar energy is free because it is powered by the Sun and the Sun's energy is free.

The most solar energy is used **between late spring and early autumn**, during the long, clear days of summer, when the sun is higher and daylight hours are longer.



Drawings of the Drone and Solar Panels



What we can do to save energy ?

- ▶ You can turn off the lights when we are not using it.
 - ▶ We can also turn off the iPad charger at break and lunch times.
 - ▶ You can turn off devices off when not being used as well.
 - ▶ Turning off the heater if the classroom is warm enough.
 - ▶ As well as turning the AC off if the windows are open.
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- ▶ If we do this, we can save more energy as a school and use the money we saved to buy more important things and equipment.