

# Our Air Quality Story 2024- 2025

Castletroy College



*Air Quality  
Campaign*



# We put up our Air Quality tubes on September 25th 2024



FRONT OF SCHOOL  
BUSY ROAD



WE SHARED OUR AIR  
QUALITY STORY 2023-2024



INNER COURTYARD  
AWAY FROM TRAFFIC

We took down the test tubes and posted them to London to be analysed for NO<sub>2</sub> on 23rd October 2024



# We made a Clean Air Map

**PREVAILING WINDS**

N.E	23km
N.W	45km
N.E	21km
N	22km
N.E	10km
S.W	5km
W	18km
W	9km

**CASTLETROY COLLEGE SCHOOL CLEAN AIR MAP**

**IDENTIFY HEAVY TRAFFIC ZONES AT YOUR SCHOOL**

**GREEN AREAS CAR PARK**

**GREEN AREAS**

**CAR PARK**

**BUSY ROADS**

**PLANT FLOWERS AND TREES**

**TEST TUBE 1 / BUSY ROAD**

**TEST TUBE 2 / QUIET COURTYARD**

**THE GLOBE PROGRAM**  
Graph it!  
Traffic Count - # Cars/5 mins

# We created a new weather station in our school



Recording rain water



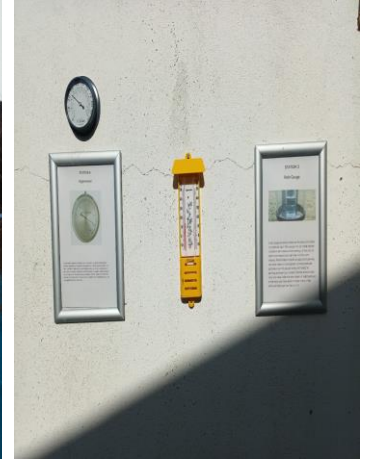
Weather vane



Recording pressure



Recording temperature



We officially opened the weather station with a visit from Met Éireann on December 11th 2024. Thank you to Globe for all the great prizes.



# Our traffic survey

We carried out both a **traffic survey** and an **idling car survey** twice weekly for **4 weeks** and recorded the results in a table. See the results table below!



Weather and Traffic Observation Chart									
Month	Year	Month	Year	Wind direction	Wind speed	Cloud cover %	Cloud type	Temp. (Celsius)	Temp. (Fahrenheit)
10	2019	0	0	W	10	10	Scattered	10	50
11	2019	0	0	W	10	10	Scattered	10	50
12	2019	0	0	W	10	10	Scattered	10	50
1	2020	0	0	W	10	10	Scattered	10	50
2	2020	0	0	SE	22	22	Scattered	22	72
3	2020	0	0	W	7	7	Scattered	7	45
4	2020	0	0	SE	7	7	Scattered	7	45
5	2020	1	1	SE	17	17	Broken	17	63
6	2020	2	2	SW	62	62	Overcast	62	144

Traffic Count - # Cars / 5 mins	
Time	Cars
10:00-10:05	25
10:05-10:10	24
10:10-10:15	25
10:15-10:20	23
10:20-10:25	22
10:25-10:30	24
10:30-10:35	23
10:35-10:40	24

# Analysis of our traffic survey

- We got an average of 23 cars every 5 minutes.
- Traffic: the numbers of vehicles on the roads tend to increase during bad weather, which increases the amount of traffic-related pollutants entering our air.



# We carried out Cloud observations weekly





WHO and



# EU Recommended Air Quality Values

Castletroy College are in the blue and green zones. We have Low to Medium NO<sub>2</sub> levels. We are well Below the EU recommendations, But we are slightly above the WHO recommendations.

mbc = results 'may be compromised'

$\mu\text{g}/\text{m}^3$	Colour Code	NO <sub>2</sub> Pollutant Level
>40	Red	High
30-40	Orange	Medium to High
20-30	Yellow	Medium
10-20	Green	Low to Medium
0-10	Blue	Low

< 40 EU recommends not exceeding this value (annually)

< 10 WHO recommends not exceeding this value



# Castletroy College Air Quality Results

## 2024-2025

School	Tube 1	NO <sub>2</sub> Result	Lab notes	Tube 2	NO <sub>2</sub> Result	Lab notes
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- Our **first test test** was located at the front of the school, beside the traffic congestion. Our **NO<sub>2</sub> levels** were **10.67 micrograms per metres cubed**. Our hypothesis was correct, we thought the levels would be quite high as there is a lot of traffic congestion at the front of the school.
- Our **2nd test** which was located in the inner courtyard, away from the traffic congestion read **5.92 micrograms per metre cubed** of NO<sub>2</sub>, which is in the recommended range for the WHO.



# Comparing our results to other schools involved in the Air Quality Experiment 2024-2025

There were 160 schools involved in the Air Quality experiment, and each of these schools sent in three test tubes for analysis in the laboratory .

The average for all the schools between the congested areas and the quiet areas was 8.71 NO<sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )

Our school had 8.30 NO<sub>2</sub> ( $\mu\text{g}/\text{m}^3$ ). This is below average which is good.

# Improved Air Quality results in our school

NO2 Levels(micrograms per meter cubed)	2023-2024	2024-2025	Improved Air Quality
Test Tube 1	8.83	5.92	<b>2.91</b>
Test TUBE 2	15.05	10.67	<b>4.38</b>

## Compare our results 2023-2024 to 2024-2025 results

Our average for **last year** was **12.17( $\mu\text{g}/\text{m}^3$ )**

**This year** it was **8.7( $\mu\text{g}/\text{m}^3$ )**

This clearly shows that there was a **decrease of 3.45 ( $\mu\text{g}/\text{m}^3$ )**.

This may be due to **construction taking place last year** beside the school. There may have been **more dust and pollution in the air**.

We also recorded slightly less traffic passing our school which may have had a positive effect on our results.

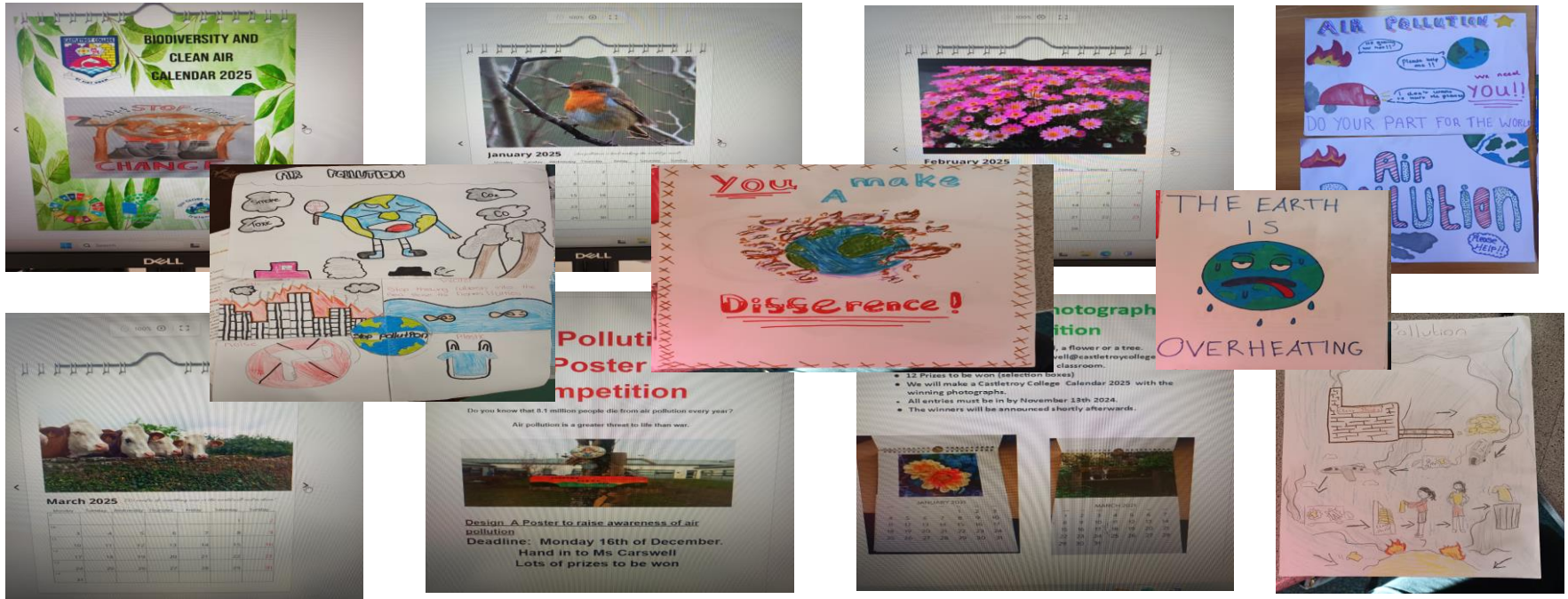
# Our Action Plan

We held a Fundraiser for our Biodiversity and Air Quality competitions



## Biodiversity and Clean Air Calendar

- We held a **Biodiversity** and **Clean Air Photography Competition** and created a calendar with the winning pictures to spread an environmentally friendly message. We also added musical jingles to each calendar month.
- We held an **Air Quality Poster Competition**. We also held a competition to write a **green code for Biodiversity** and for **Air Quality**.



# Music Jingles added to our Calendar 2025 to promote Clean Air

Some jingles from 3rd year music class:



**'Air pollution is bad, Making the world go mad,**

**We need to do something soon, Or the world will end in doom'**

**'Help us improve our air quality, keep the air clean for you and me'**

**'Save the earth, it is our home, clean the air, we can't do it alone'**

**'Save the air, show you care, breathe in clean everywhere'**

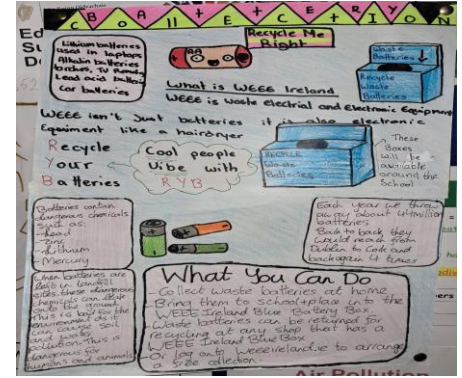
**'Keep the smoke out of the sky, keep our levels low not high'**

**'Be a part of our air quality solution, help stop climate change and the long line of pollution'**

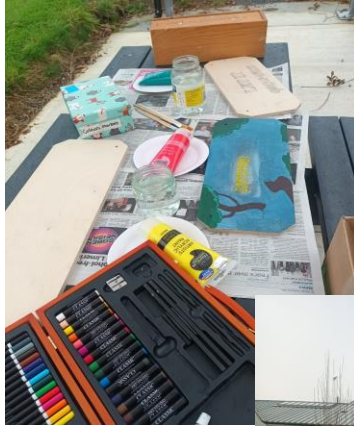
# We encouraged pupils and staff to Recycle Batteries

Lithium Batteries, in particular , can be volatile and cause landfill fires, releasing harmful gases into the atmosphere.

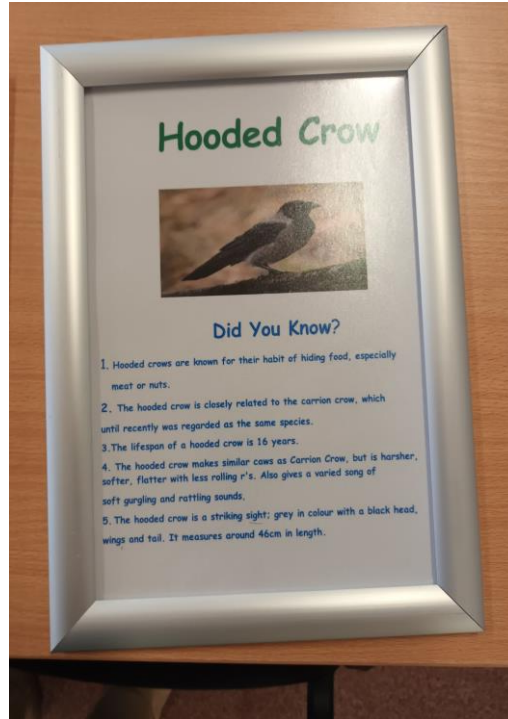
Batteries can emit pollutants into the atmosphere contributing to climate change and photochemical smog pollution.



# We Made signs for our Biodiversity Garden to promote Clean Air and Biodiversity in our school



We put up Animal fact sheets in our school courtyard to promote Biodiversity



We put up Air Quality information and air quality signs in our courtyard to promote clean air



## Signs on trees and outdoors



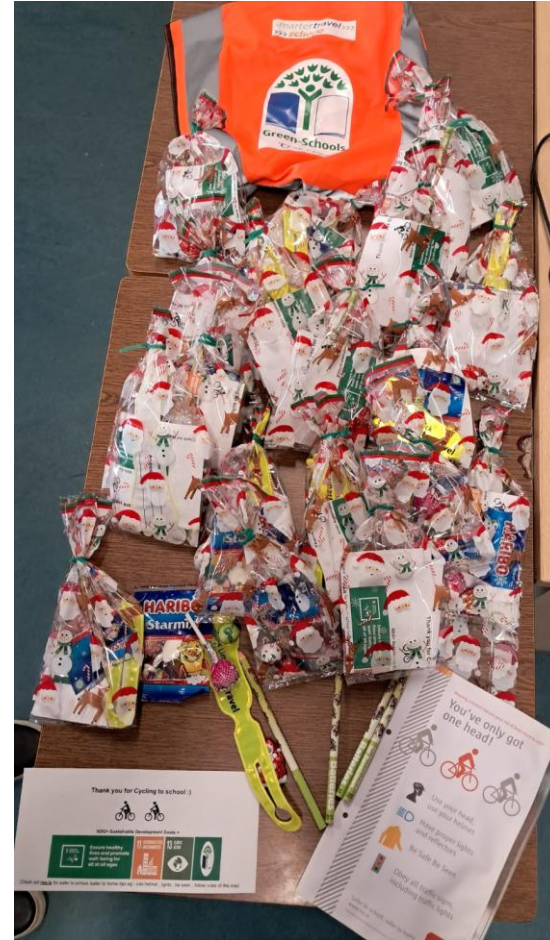
# No idling turn off engine and no incineration signs



# We made treat bags to encourage pupils to cycle to school



# Treat bags to encourage pupils to cycle to school



# We watched Clearing the Air with Nasa webinar 29th November



Sponsored by:  Supported by:   

# We got involved in the Clean Air together Project



## Clean Air Together

Clean Air Together is a citizen science project run by the Environmental Protection Agency where citizens volunteer to measure levels of a traffic-related air pollutant outside their home over a 4-week period in October.



## GLOBE - EPA Pilot Air Quality Project (Environmental Protection Agency)

The purpose of the project is to better **understand air quality** at schools by measuring several different pollutants – **nitrogen dioxide, particulate matter** (PM 2.5, PM 10) on a continuous basis using air quality sensors.



## EPA Pilot Air Quality Program

We installed an Air Quality monitoring system in our school on 8th December 2024 and we installed a Davis Weather Station in our school on 11th December 2024



We made signs to stop mowing the lawn in order to save habitats and improve air quality



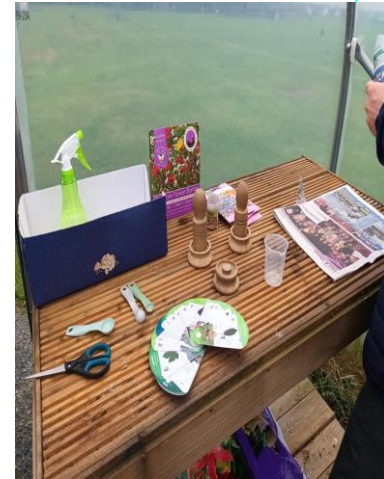
# Improve Air Quality, Signage to promote wildlife habitats



# Working on the Polytunnel - Green House

More plants, better air

Quality - busy planting!



# Bird Watch Ireland Talk online

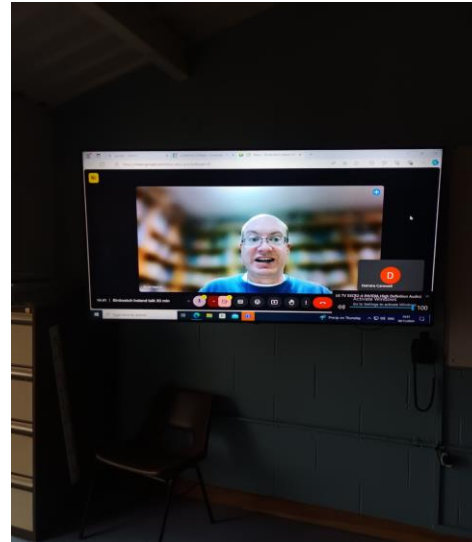
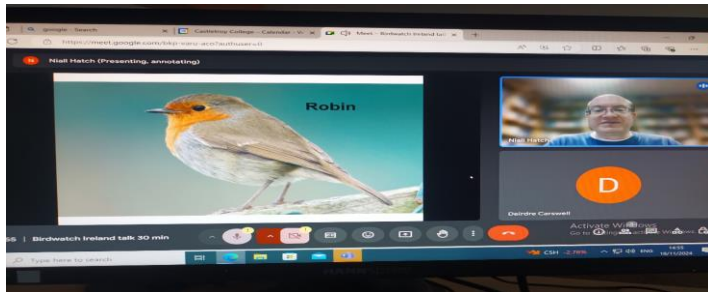
Niall Hatch from Birdwatch Ireland

Gave a talk about

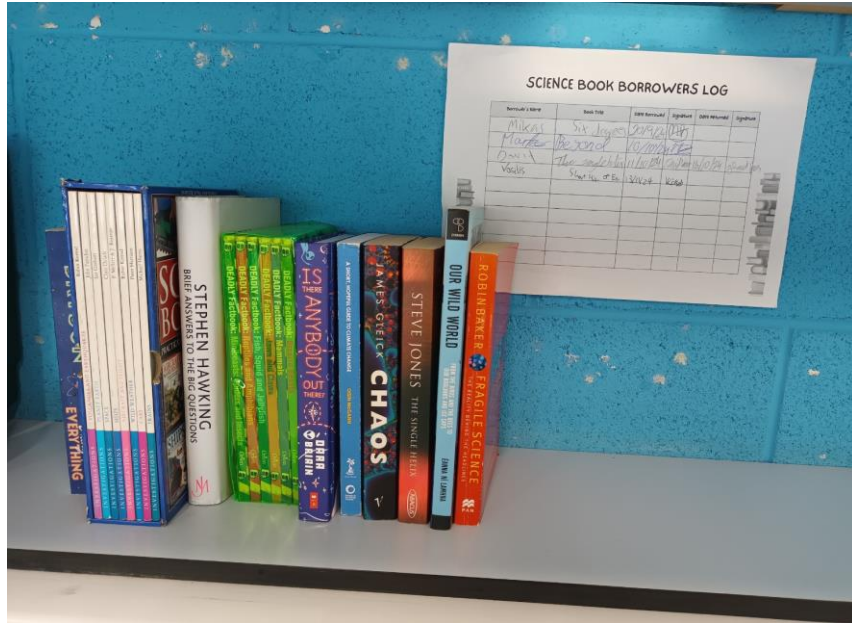
Biodiversity and Birds and how

important air quality is to all

living things.



# Our New and improved Environment and Science based Book Club 2024- 2025



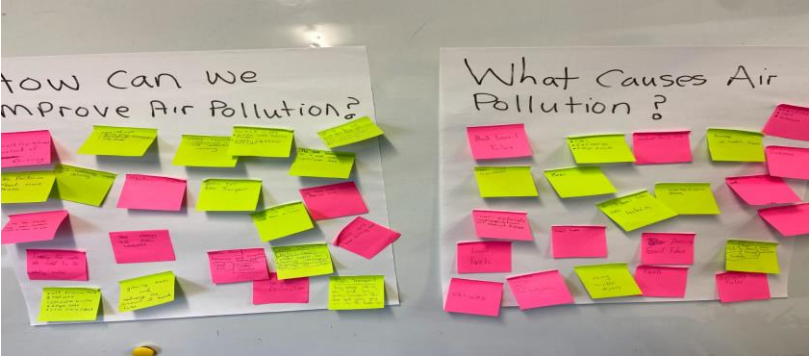
Future plans 2025

We will make a vertical herb garden in spring



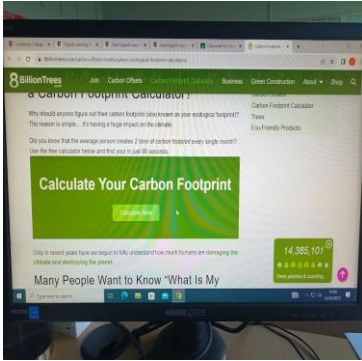
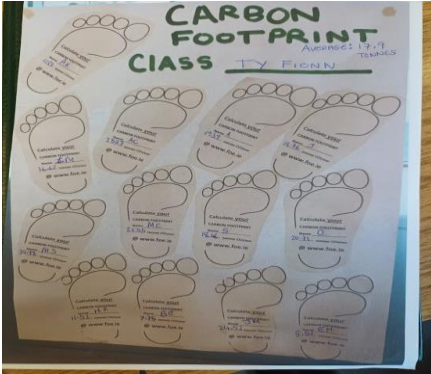
# Future plans 2025

We plan to visit our local Primary school to present our new Air Quality Ppt to them



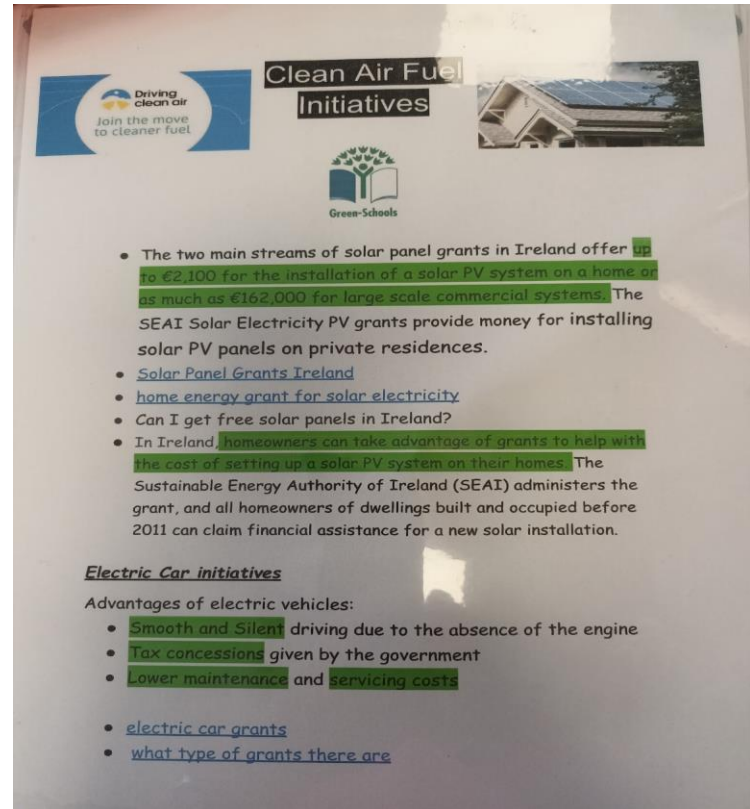
# Future Action Plan 2025

We plan to do Carbon Footprinting with our SPHE classes next semester.



# Future plans 2025

We will research the Clean Air Fuel Initiatives in Ireland for 2024-2025.



**Clean Air Fuel Initiatives**

**Driving clean air**  
Join the move to cleaner fuel.

**Green-Schools**

The two main streams of solar panel grants in Ireland offer up to €2,100 for the installation of a solar PV system on a home or as much as €162,000 for large scale commercial systems. The SEAI Solar Electricity PV grants provide money for installing solar PV panels on private residences.

- [Solar Panel Grants Ireland](#)
- [home energy grant for solar electricity](#)
- Can I get free solar panels in Ireland?
- In Ireland, homeowners can take advantage of grants to help with the cost of setting up a solar PV system on their homes. The Sustainable Energy Authority of Ireland (SEAI) administers the grant, and all homeowners of dwellings built and occupied before 2011 can claim financial assistance for a new solar installation.

**Electric Car initiatives**

Advantages of electric vehicles:

- **Smooth and Silent** driving due to the absence of the engine
- **Tax concessions** given by the government
- **Lower maintenance** and **servicing costs**
- [electric car grants](#)
- [what type of grants there are](#)

# Future plan 2025

We hope to collect lots to data from our EPA Air Quality Pilot Program.

We did 2 workshops in January to learn how to analyze the data.



# Air Quality Poem Competition Winner

**Poisonous clouds of grey  
Our world can't be left astray  
Little by little we can make a difference  
Letting chemicals spills need to end,  
Unique solutions  
That can stop pollution  
In order to save  
Our beautiful Earth  
Never give up on our world**



# Our Air Quality Survey

We hope you enjoyed our Air Quality Story.

Thank you for listening.

From Our Castletroy College 'Green-School's Team'

