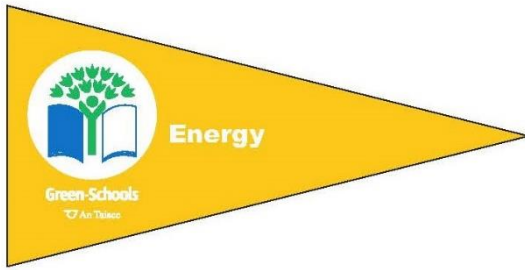


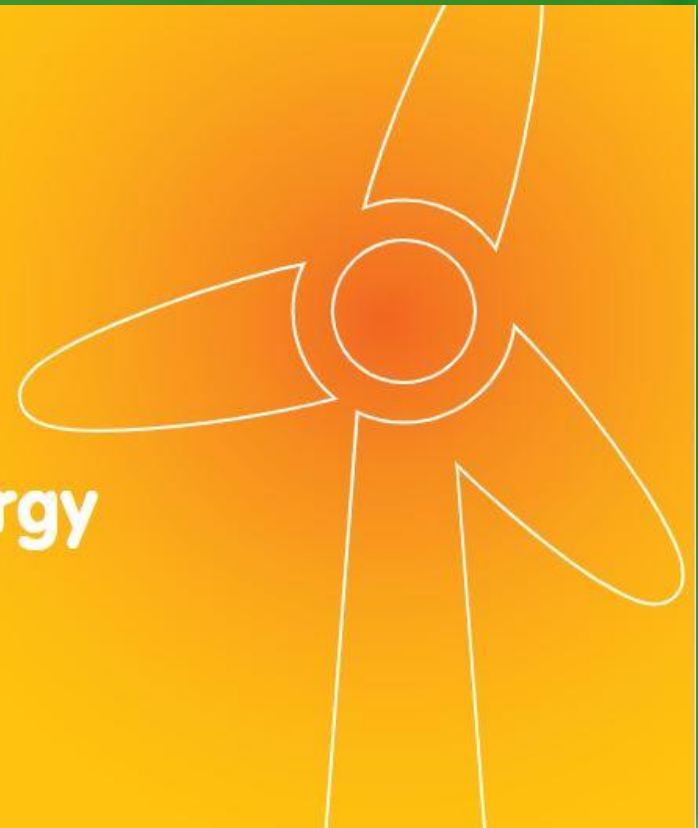
Green-Schools

Introduction to the Energy Theme



Energy Seminar

Energy



Green-Schools is in the: Environmental Education Unit of An Taisce



Green-Schools Ireland

International
Environmental Programme

Holistic

Ethos

Award Scheme

Long Term
Programme

Whole-School Action



Green-Schools for Everyone

Situation will vary from school to school

Green-Schools is a structured but FLEXIBLE programme



Green-Schools' mission is to protect planet Earth - our shared home to which we all belong -and we want everyone involved!

We warmly welcome students of all backgrounds, cultures, races and ethnicities, religions and belief systems, abilities, sexual orientations and gender identities. Equity, diversity and social justice are fundamental to our values – so whoever you are, we can't wait to have YOU involved

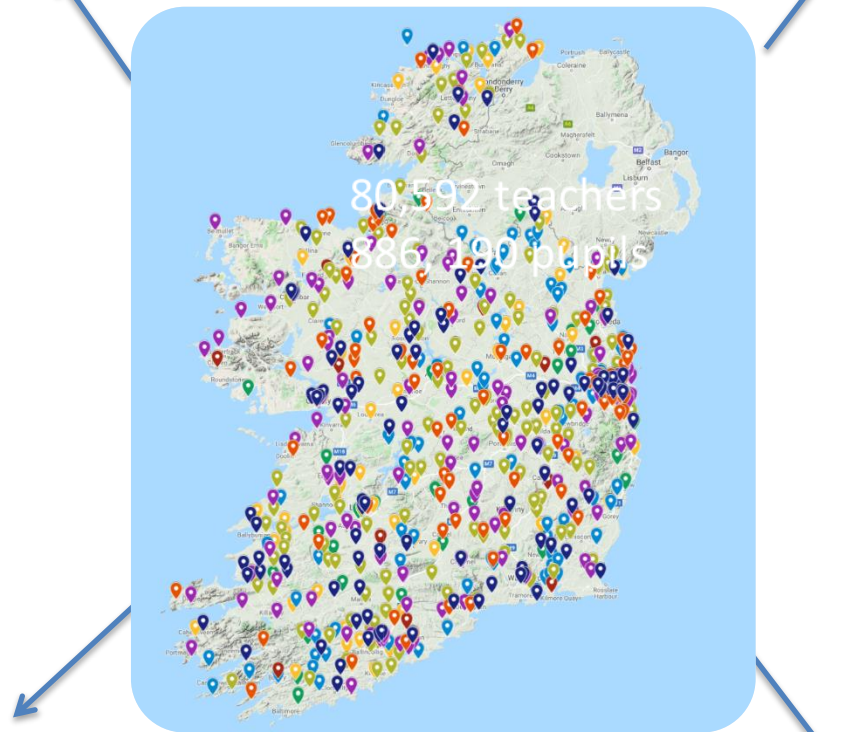
Partnership



Green-Schools in Ireland

3,634 schools registered

Over 83% of all schools
in Ireland



80,592 teachers
886,190 pupils

3,350 schools awarded

Green-Schools Themes



9: GC Travel



10: GC Food & Biodiversity



1: Litter & Waste



2: Water



8: GC Marine Environment

Green- Schools
Themes



3: Energy



7: GC Energy



6: GC Litter & Waste



5: Biodiversity



4: Travel

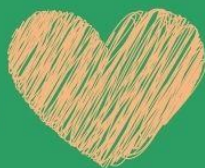
2021/2022 In Review



GREEN-SCHOOLS

SAVINGS

2021/2022



642 schools awarded

LITTER&WASTE



53 first green flags awarded
77% of schools reduced their landfill waste
57% carried out a community clean up

WATER

88% of schools had excellent awareness about water
77% have a water butt and/or a rainwater harvesting system and 56% carried out a cleanup of a beach/river/canal



TRAVEL

86% of schools recorded an increase in sustainable travel
20,725 students participated in 855 WOW days



BIODIVERSITY

77% of the students understand how to help biodiversity.
3608 trees planted and 304 new bug hotels



GLOBAL CITIZENSHIP

30,000 students increased knowledge on global citizenship to good and even excellent
528 Irish students participated in the Global Classroom project

MARINE ENVIRONMENT

95% of schools investigated marine litter prevention
59% of schools investigated Global Goal 14: Life Below Water



FOOD AND BIODIVERSITY

100% of schools grew crops on their school grounds
52% of schools did Cooking Skills Workshops
More than 95% of schools took part in two or more cooking activities



Global Citizenship Litter & Waste & Energy Themes 2021

117

Primary and secondary schools across the country received the Global Citizenship Litter & Waste or Energy

Global Citizenship Education 2020/2021

WHAT OUR SCHOOLS ACHIEVED

106 Newly awarded Green Flags for Global Citizenship

449,224 Students Involved in Global Citizenship Education

386,782 Students learnt about the Sustainable Development Goals

386,782

Students learnt about the Sustainable Development Goals

86%

Of children understood what climate change is and were able to give examples of action to reduce it

89%

Of children gave unwanted items to charity shops



INTERNATIONAL LINKING PROJECT

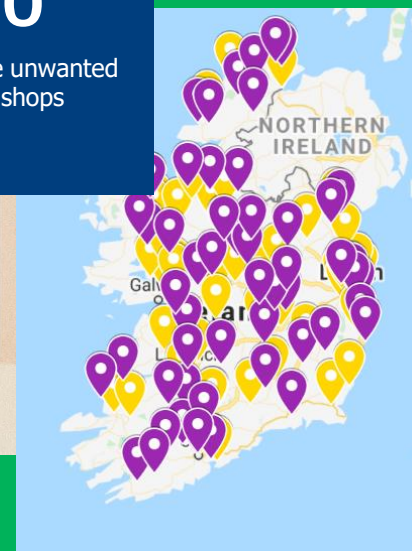


82%

Participated in community cleans ups

65%

of children were aware they had something to eat or drink from a less developed country in the past week



3,125 Visits to the Global Citizenship theme pages on the Green-Schools website

1,232 Teachers visited the Global Goals Bookclub homepage

225 Teachers participated in the Global Citizenship teacher training seminars

2,151 Teachers taught their junior students about Goal 3 Health and Well-Being

19 Teachers participated in Green-Schools and the Global Goals Teacher training summercourse

Innovation and Technology

Miro boards

Kahoot

Typeform

Design Thinking

Zoom

WhatsApp

Designathon

"I didn't like it I loved it. The quality of presentations, speakers, activities was excellent.....the work was continuously linked to the SDG's This course has made me feel more confident about teaching GCE"

"I have learned about SDGs 4, 6, 11, 12 and 15 and how to introduce the topics within the classroom and enthuse children across all year groups"

Why Energy



7 AFFORDABLE AND
CLEAN ENERGY



What is Energy?

Science defines energy as the ability to do work.

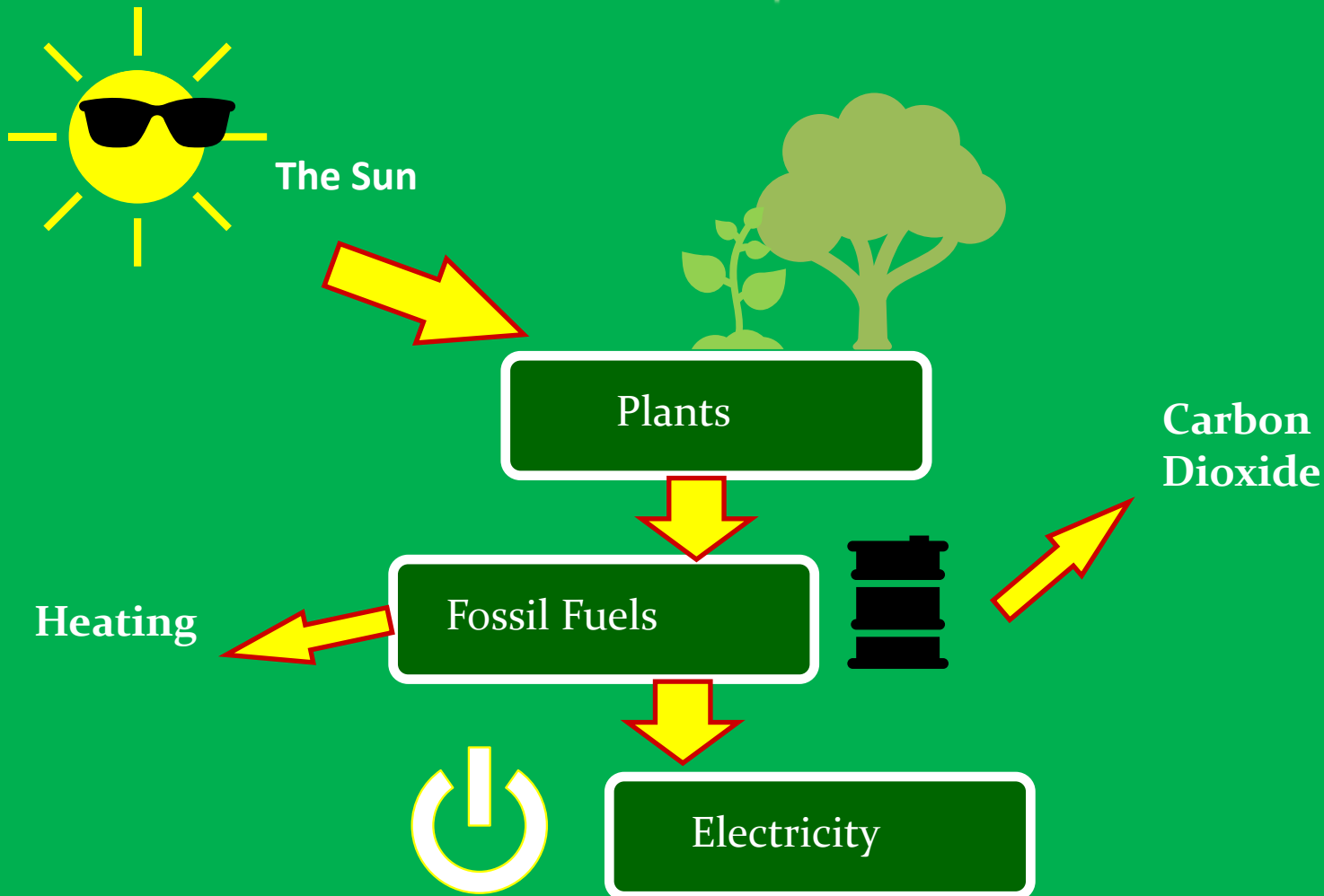
We use energy for everything we do, from running to catch a bus to sending astronauts into space!

Energy is all around us and comes in different forms

- **heat (thermal)**
- **light (radiant)**
- **mechanical**
- **electrical**
- **chemical**
- **nuclear**

Although there are many forms of energy, most can be put into two categories, kinetic (motion) and potential (stored).

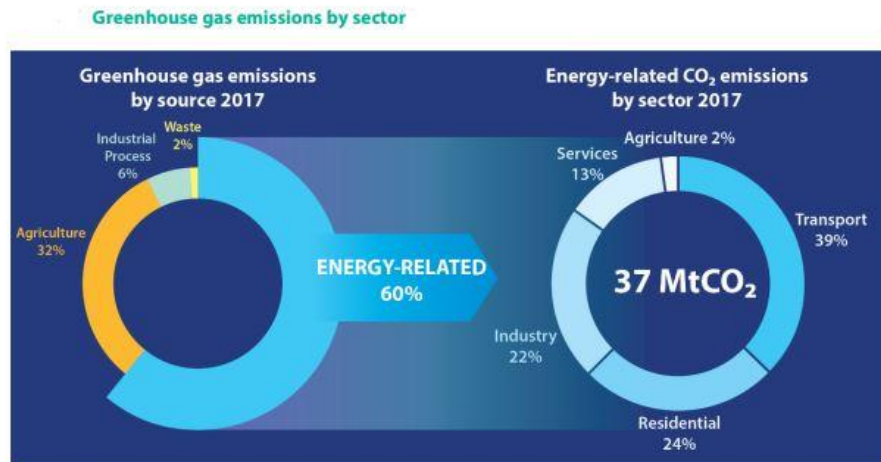
Origin of Energy



Renewable Sources - Solar, Wind, Hydro, Biomass

Why care about energy?

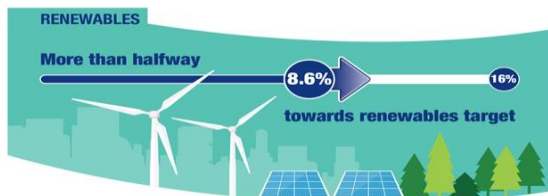
7 AFFORDABLE AND
CLEAN ENERGY



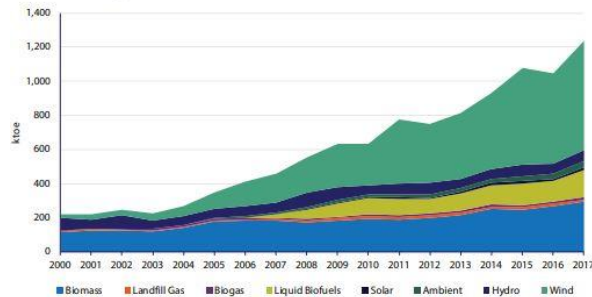
➤ Heavily dependent on Fossil Fuels

- Finite resource
- In Ireland over most of our energy comes from the non-renewable sources
- High dependency on imports- 85% of our primary energy demand
- Major contributor to the greenhouse effect – CO₂ emissions-Climate Change
- 2030 EU targets

Renewable Energy

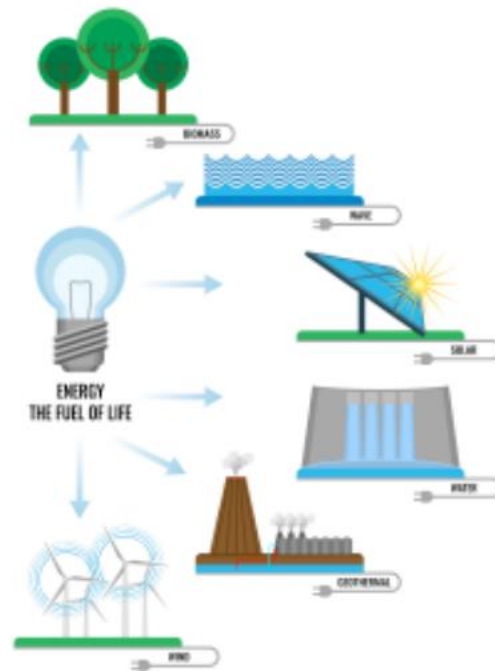


Renewable energy use, 2000 to 2017

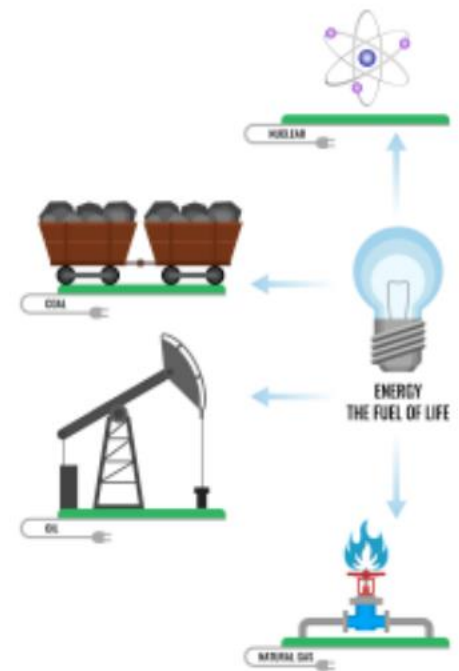


ENERGY SOURCES

RENEWABLE ENERGY



NON-RENEWABLE ENERGY



School Energy Usage

School Energy Use

Appliances
17%



Other
8%



Lighting
23%



Heating and
Cooling
52%



The recommended temperature for classrooms is 18°C. Every 1°C increase in temperature over this figure will add up to 10% to cost of heating bills.



Between 50-70% of the energy used in schools is for space heating.



Savings of about €80 per year can be made by switching off a PC outside school hours, instead of leaving it on

Insulating any attic spaces in a building could reduce heat loss by 25%, providing a payback as short as 3-5 years.

A typical photocopier in power saving mode can save 92% of the energy used in standby mode, but any photocopiers will not go into power saving mode if the lid is open.



Transport is the largest source of energy consumption in Ireland accounting for 36% of the primary sector in 2017. The average emissions of new cars purchased in 2017 was 112.7g CO₂/km and transport emissions increased by 2% to reach 5,138 ktoe (SEAI, 2018).



LED bulbs reduce energy consumption by about 75% compared with tungsten bulbs, and they last much longer. They use less energy than CFL bulbs too.

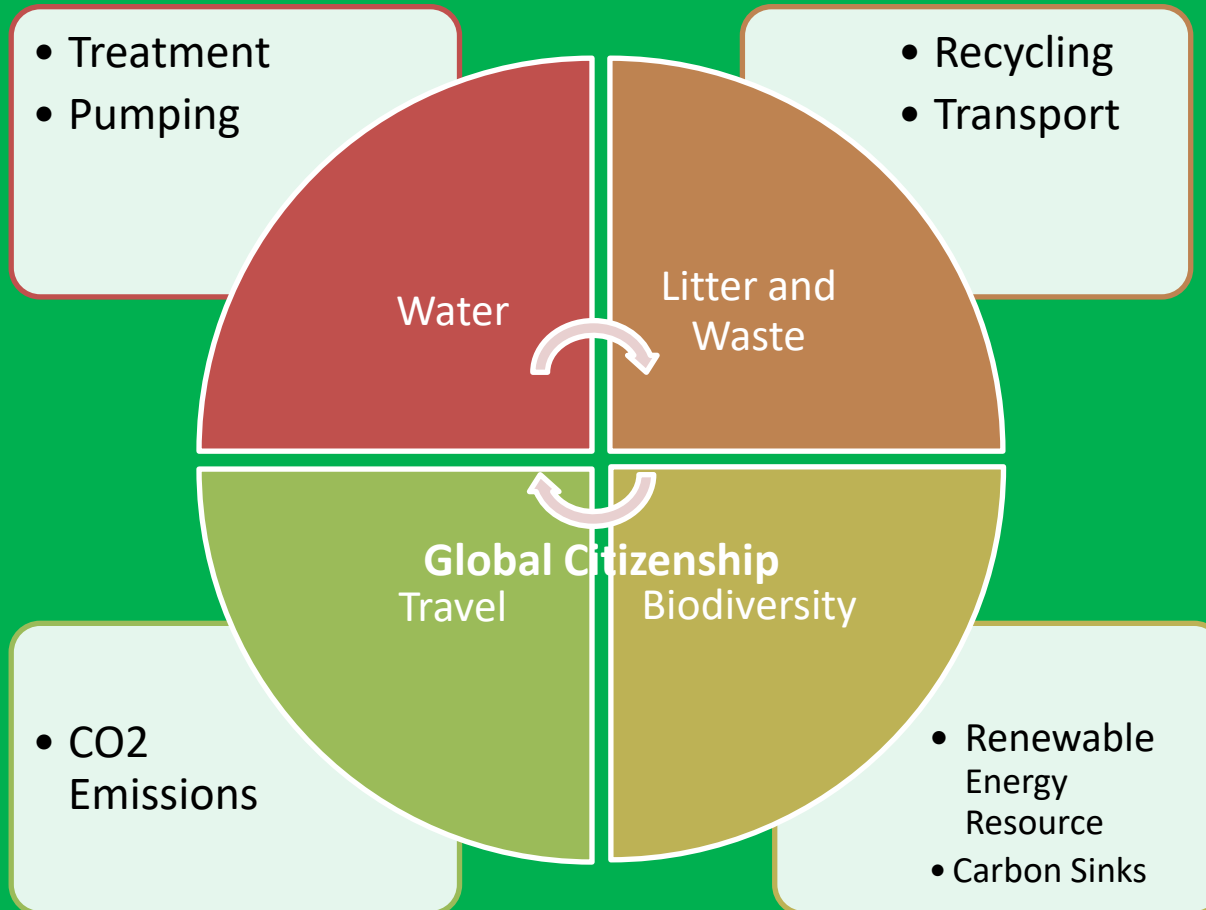


Some laptops use 25% of the energy used by desktops.

Sustainable Energy – Use less, Use Clean!



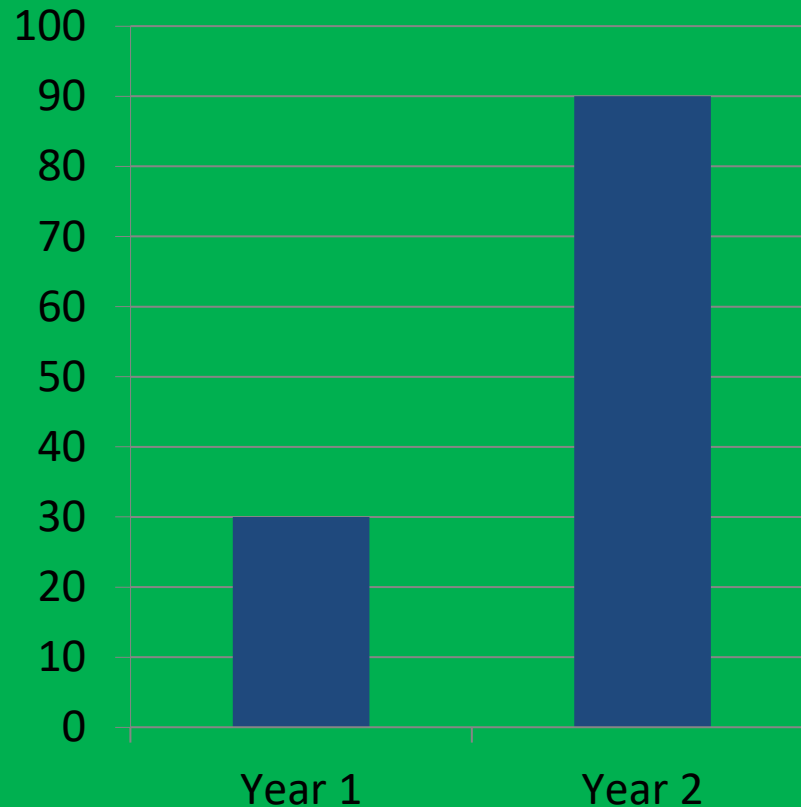
Linkage with other themes





Does Green-Schools Make a Difference?

Raising awareness is
KEY!



Remember...



- Situation will vary from school to school
- Green-Schools is a structured but FLEXIBLE programme

Seven Steps – Step 1

Green-Schools Committee

- Choose your committee depending on what will work best for your school e.g. whole class, pods, rotating committee
- Hold regular committee meetings
- Record the minutes of each meeting
- Give pupils roles within the committee

Use the chat box to share how your school plans on choosing their committee



Step 1: Green-Schools Committee

Essential:

- Students (N.B. student led)
- Co-ordinator

Optional:

- Teaching Staff & Non-teaching staff
- Principal
- Caretaker
- Parents & Community Members

Sub committees; Delegate energy wardens,
'Energy detectives' 'Power rangers' 'Energy vampires'
Eg 'Lightguard on duty' Captain Power, Lieutenant light bulb and High Tower Heat,

litter detectives-rotate frequently to maintain interest.

Delegate responsibility of notice board to a different class each week, enforcing whole school involvement

Award best classroom with 'green cup/cert'



Step 2. Energy Review

- If you cant measure it, you cant monitor it!

- How much energy is the school using? (Quantify)
- Where is the school using energy? (Blackspot mapping)

Essential Actions:

Take regular meter readings-bills, kwh, seasons
Oil-count refills

Recommended Actions:

- Appliance Survey
- Light Survey
- Standby Survey
- Thermostats – classroom temperatures
- Awareness Survey/Questionnaires



Top Tips:

- We suggest that a small number of students from the same pod could be responsible for reading energy meters, in a low or no contact manner.
- An overall energy audit could be done by each class group doing their own audit in their own classroom, and remotely recalling what energy devices are in common areas.
- Finally, the Energy Survey will perhaps need to be done within each class group to limit interaction

Environmental audit

Your Classroom

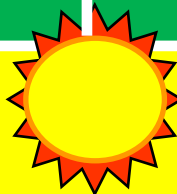
Roof

Insulation

Windows
& Doors

Draft Proofing
Glazing

Lighting



Switch it off Campaign
Calculate cost per unit

Insulation

Walls

Radiators

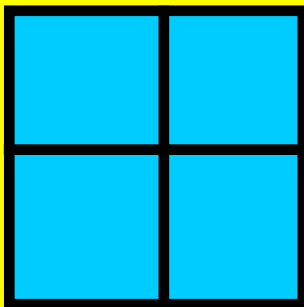
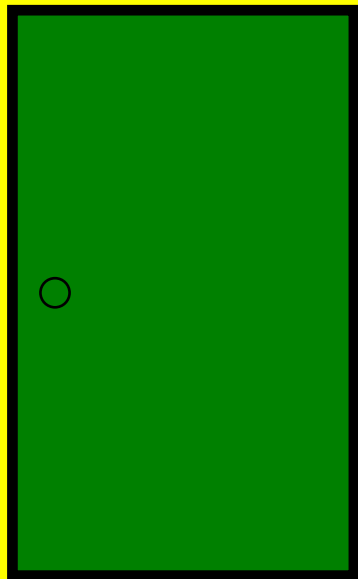
Thermostats, Timers

Appliances

Check Energy E.rating

Floors

Check out of hours usage
Carpets



Meter Reading

Reading a revolving disc meter

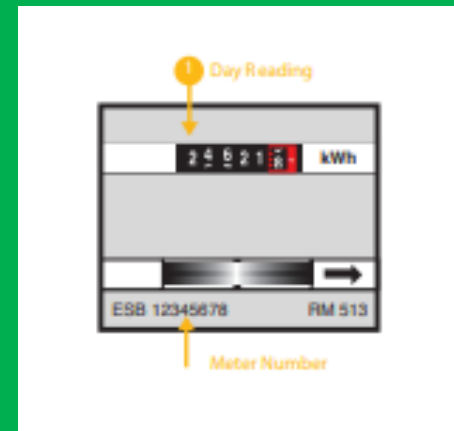
This is the most common meter type for domestic buildings.

It has a revolving disc and one or two rows of numbers.

To read your revolving disc meter:

- Note the number from left to right.
- Ignore any figures in red or any figures surrounded by a red box.

Standard meter

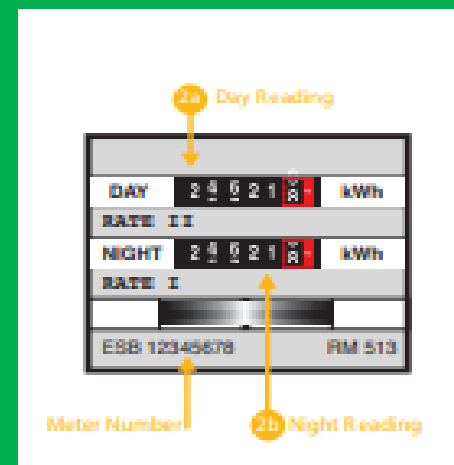


A standard meter records your electricity usage on a single register. If you are on an Urban 24-hour or Rural 24-Hour price plan, you will probably have this kind of meter. If you have night storage heaters, you will have two of these meters.

Day and night meter

Records your day and nighttime electricity usage. These meters may have numbers 1 and 2 or the roman numerals I and II beside each register.

On all Day and Night meters, I refers to Night and II refers to Day.



Meter's continued

Electronic meter

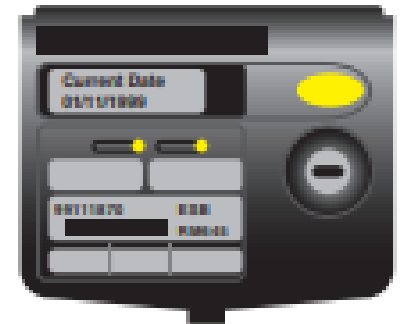
The display automatically changes every 9 seconds to show you

20 different types of meter readings. Screen 9: Normal or Day time reading. Taken from ww.electricireland.ie. Monitoring and Reporting (M & R)

Reading an electronic meter

Electronic meters are now being installed in some homes. They have scrolling electronic displays which show several different meter readings.

- Take your reading from the appropriate screen depending on your price plan.
- Note numbers from left to right.
- Ignore any figures to the right of the decimal place.



SEAI's Monitoring & Reporting System

SEAI's Monitoring & Reporting System:

Why do schools need to report? The 2019 Climate Action Plan set out 2030 targets for the Public Sector to reduce CO2 equivalent emissions from the sector by 30% and improve energy efficiency by 50%.

In response to this, SEAI has developed an online energy Monitoring and Reporting (M&R) system to help public sector organisations, including schools, track their progress towards the 2030 energy efficiency target. As well as enabling you to report and track your school's energy data annually, the online system provides you with:

- A scorecard that presents a powerful snapshot of the school's progress to date.
- Online access to your annual electricity and natural gas consumption data, which is particularly useful if you have changed supplier over the years.

Electricity, oil & gas readings

Reading the Gas Meter

Dial Card Meter				
Each Division	Cubic feet:		Each division: 10	
				
	100,000	10,000	1,000	100
Per Revolution				
	1,000,000	100,000	10,000	1,000

Digital Meter

In the case of a five dial meter, count these



In the case of a four dial meter, count these



www.energycustomers.ie



Environmental review

9. Please compare the amounts of energy your school used for two periods over the duration of your work on the Energy theme:

Please compare energy consumption for two similar periods i.e. if the figures you are providing for year one were taken in October and November, then provide figures taken from October and November in your second year as well.

Year 1 (Review) - Electricity

Start date for period over which electricity consumption was calculated

10/10/2016

Number of school days in this period (Please use numbers only)

33

Amount of electricity used in kWh

3574

Average number of kWh used per person per day

41

Year 2 (Latest Figures) - Electricity

Start date for which electricity consumption was calculated

10/10/2017

Number of school days in this period (Please use numbers only)

33

Amount of electricity used in kWh

1924

Average number of kWh used per person per day

22

How did you measure/track your electricity consumption? Eg. read meter; checked bills etc.

students checked meter every week

Energy Meter Reading Tracking Sheet



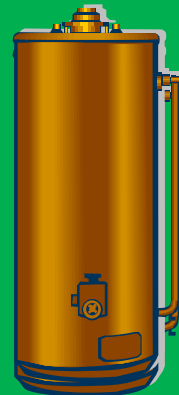
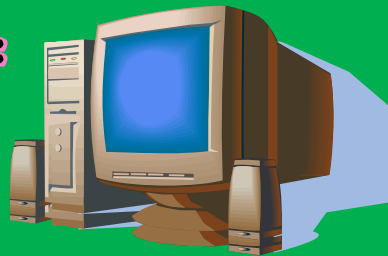
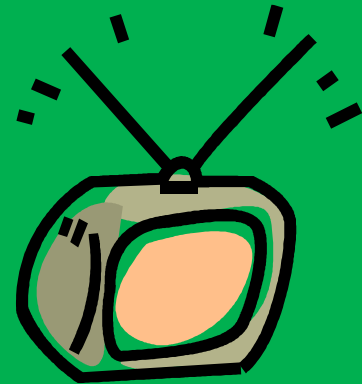
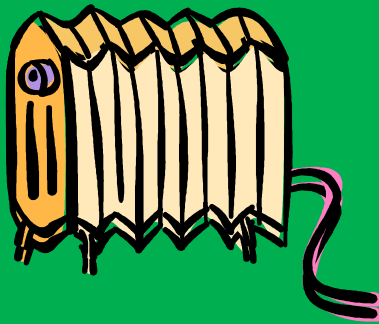
School name:

St. Davaddag's NS

Day	Date	Current Reading	Units used since previous reading	Name (or Initials)
Thursday	17 th /12/15	029632	972	C.H.
Thursday	3/3/2016	030994	1,362	Mm
Tuesday	19/4/2016	031549	555	AS
Tuesday	19/5/2016	031999	450	RR
Wednesday	14/9/2016	032802	803	Mm
Thursday	6/10/2016	033094	292	Mm + children ²
Thursday	10/11/2016	033529	435	C.H
Thursday	1/12/2016	033943	414	R.R
Monday	9/1/2017	034424	519	Mm
Monday	6/2/2017	034944	520	m.m.

Appliance Survey

Map the school

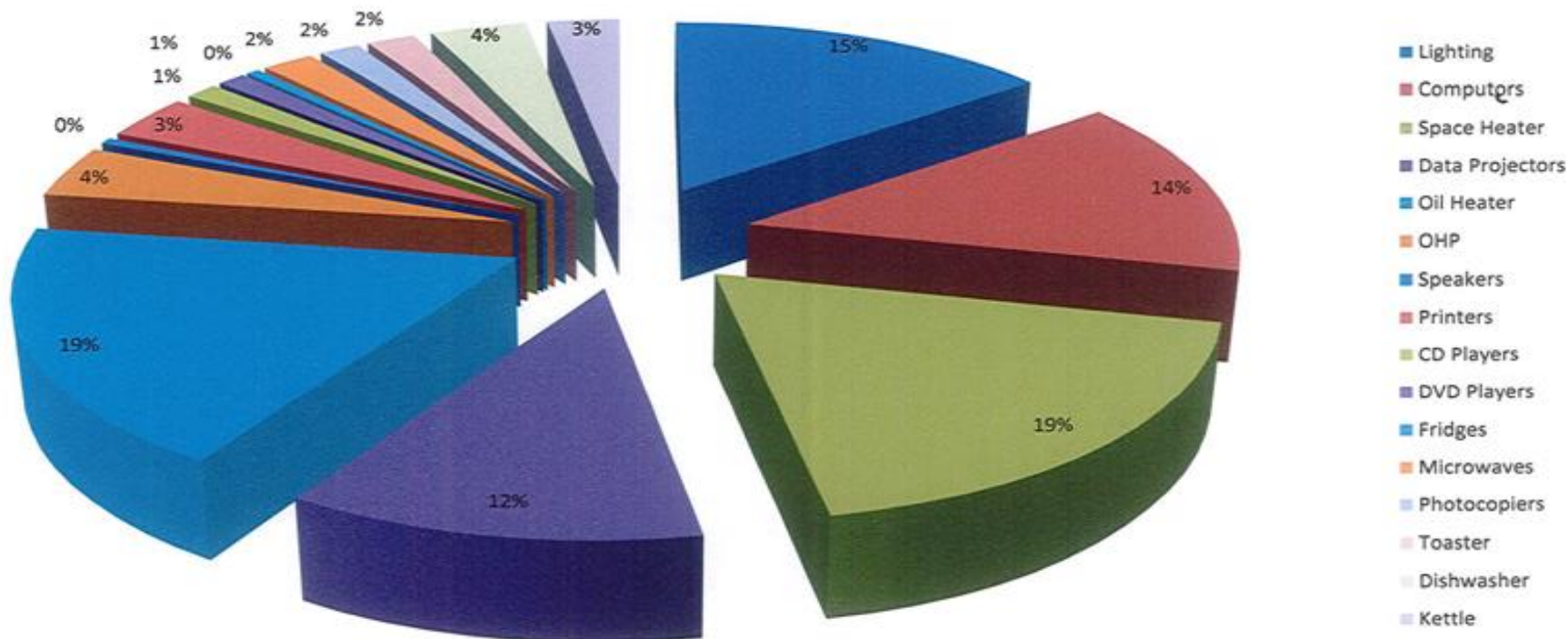




Average Energy Usage Per Day in Watts

Energy Usage

Energy Consumption:
Lighting, Heaters, Computers &
Data Projectors account for 79%



Light Survey

- On average, lighting accounts for about 30% of school energy costs!
- Count the lights
- Note the wattage
- Estimate how long they are left on each day
- Assess the bulb type
- Carry out a Natural light survey



Standby survey

Vampire Hunt!

- Remember: It's an energy vampire if it has “active”, “sleep/standby”, or “off” modes.
- If it can only be turned on or off (like a lamp), then it is a regular electronic device.
-

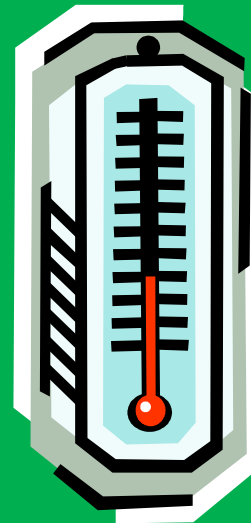


Establish a team to discover where Energy Vampires exist
• in the school!



Thermostats

- The INTO recommends 18 degrees
- The temperature should not fall under 16 degrees
- Costs rise by 8% for every 1°C increase
- Ensure external doors are sealed
- Ensure heating is adjusted over holidays, weekends
- Keep radiators clear-reduces output
- Boiler control



If you are opening windows in Winter because it is too stuffy, turn the thermostat down!

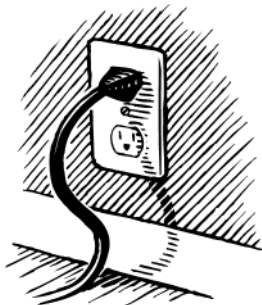
Step 3 Action Plan

Action	Person/Group Responsible	Time Frame
Carry out a Biodiversity Awareness Survey to examine the level of awareness among students and staff	Green-Schools Committee	Early to mid September
Habitat Map the school grounds and do up a list of the biodiversity in our school	Green-Schools Committee	Early to mid September

Two overall objectives



1) Increase levels of awareness



2) Practical improvements

Action/Target: Year One	Person/Group Responsible	Timeframe	Progress Made
<i>% targets</i>			
<i>Achievable</i>			
<i>Actions needed to meet targets</i>			

Seven Steps – Step 3

Action Plan

Use results from the environmental review to inform your action plan and set realistic targets.

Step 3:

Action Plan

Goal 1: To ensure that everyone in the school is aware of the Green-Schools Energy Programme and fully participates therein.

Achieved	Person/Group Responsible	Timeframe	Achieved
Questionnaire to be sent home re energy use	Green Committee	Nov/Dec	
'Turn it off' and 'shut the door' signs to be displayed throughout the school	Green Committee	November + announcements to be made at regular intervals over intercom	
Inform parents of work in school re energy and keep children informed re progress	Green Committee	Ongoing	
Appoint Energy Warden in each class to switch off lights, check standby status and blinds daily	Class Teacher	January	
Organise an SEAI workshop for students and teachers	Green-Schools Coordinator	January Year Two	

Goal 2: To discover the amount of electricity and oil being used each day/week/year and to try and reduce consumption of both.

Achieved	Person/Group Responsible	Timeframe	Achieved
Appoint Energy Wardens	All Classes	Ongoing	
Close blinds at 3pm	Energy Wardens	daily	
Turn off lights and appliances when not in use	Energy Wardens	ongoing	
Close outside doors at break	Energy Warden 3rd and 4th Classes	ongoing	
Count number of light switches, radiators, sockets, doors and windows in school	Green Committee	November	
Record electricity meter daily for a week	Green cCommittee/ Class teacher	Feb and March	
Record temperature outside and inside for a month	Green Committee	November	
Price of electricity for a day/week is calculated and displayed on notice board	Class Teacher	November	
Purchase energy meter from ECO shop to make school visually aware of energy use	Class Teacher	February	
To switch off hot water in all the classrooms	Green-Schools Coordinator	October	

Action Plan Tips



- Start with no cost
- Switch it off campaign
- Standby campaign
- Check thermostat settings
- Check energy ratings if buying new appliances
- Switch to CFL bulbs
- Use plug strips
- Low Energy Days
- Tinfoil at the back of radiators
- Re-organise furniture
- Close blinds at night
- Make draft excluders from waste materials

7 AFFORDABLE AND
CLEAN ENERGY



Health and Safety



- Health and Safety Policies
- Supervision
- Ventilation and Lighting
- Hot Water
- Be aware of dangerous areas and insurance policies



Step 4 – Monitoring & Evaluation

- Developed in parallel with the Action Plan.
- Carried out by student when and where possible
- Meter Readings
- Energy Wardens
- Follow-up Survey
- Monitor progress
- Check and Revise Action Plan
- Notice board – graphs/pictures



Step 5 - Curriculum links



Maths

- Bar charts & graphs
- Applying calculations and using energy data in real life context
- Introduction to standard unit of measure - watt, kilowatt-vol of oil, litres used , recording oil & electricity
- Database management

Science

- Energy & Forces; sun, light, renewable resources
- Planet earth in space: recognising the sun as a source of light & heat
- Food Chain
- Developing scientific approach to problem solving

English/ Languages

- Oral language
- Essay topics
- Poems, slogans
- Green-Code
- Public speaking
- Debates
- Media-communication for newsletter & website.

Art

- Poster competition
- Make snake 'draught excluder
- Use of recycled materials to create Art
- Fancy dress

History

- Industrial Revolution
- Types of power
- Transport & Communications, comparing energy use in the home today to that of older relatives and ancient societies.

Geography

- Human & Natural Environment
- Climate change & Weather: How weather influences the lives of people, plants & animals in the area. Forestry, Farming & Manufacturing
- Discussion & exploration of enviro issues; pollution & litter; solutions & possible actions
- Maps/graphical skills
- Glacial activity

SPHE

- Types of Energy
- Care for the environment
- Responsibility to protect environment
- Fieldtrip to windfarm

ICT

- Using technological tools to source, explore, analyse information.

All

- Snakes & Ladders energy game
- Guzzlers book on Energy
- Problem Solving, reasoning and communicating findings



Step 6 - Informing & Involving

- GS Notice Board
- Local Press
- School Newsletter
- Website
- Send Energy Saving Tip of the Month to all Parents and Members of the Board of Management via webtext.
- Make use of website to ensure transition to homes; text a parent service, assign pr officer amongst committee.
- Day of Action
 - Low Energy day
 - Switch it off Campaign
 - Virtual Visit to nearest power station or windfarm / zoom talk
 - Find out if any of the pupils have renewable energy sources at home and see if a Virtual visit would be possible?



WIND.

Does the wind blow me?

YES

NO



SINK OR FLOAT

Float or Sink?



Energy

The Pressure of Air



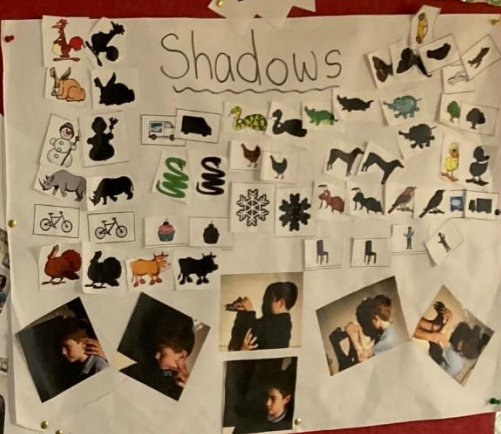
MAGNETIC FORCE

MIXING LIQUIDS



LIGHT.

Shadows



KITE FLYING



Low energy days



Today is a
Low Energy Day.
Don't turn on the
switches!

Raising Awareness



Low Energy Week



Open Day!

Action Days



Fancy Dress!



Guest Speakers eg. Pedal Bikes

Poster competitions



Reminders!

The heat is getting away
so I'd just like to say:

CLOSE THE
DoOR !!



HAVE YOU SWITCHED OFF...

1. The computer monitor?
2. The projector?
3. The lights?

Step 7- Green Code

Aim: To state the objectives that demonstrate the school's commitment to environmentally-friendly actions

- Competition
- Rap/song/poem
- Display on Green-Schools Notice Board



"Don't kill a watt, save a lot"
St. Louis NS, Rathkenny

*Reduce Bord Gais,
Save the Dosh!
Baltydaniel NS, Mallow*

*"When it's bright, switch
off the light"*
Billis NS, Cavan

Working on Green-Schools has helped to create awareness about the energy we use in our lives and where this comes from. The children realise that we can all help to save energy-even by taking small steps in our day to day lives and they have also taken this message home!

***Scoil Naomh Úna, Shielbaggan,
New Ross, Co. Wexford***

The Circular Economy



<https://www.mywaste.ie/the-circular-economy/>

LINEAR ECONOMY

Materials in a **Linear Economy** create waste after use.



VS.

CIRCULAR ECONOMY

Materials in a **Circular Economy** are collected and reused after each use.



The Circular Economy

www.mywaste.ie/the-circular-economy/



www.mywaste.ie

mywaste

what ▾

where ▾

why ▾

more ▾

Search



home → what → what to do with my waste electrical and electronic equipment (weee)?

what

what to do with my waste electrical and electronic equipment (WEEE)?

spread the word!



<https://bit.ly/2BNfD8f>





Sustainable Energy Workshops

SEAI are back to conducting in-class, outdoor and online workshops for students and teachers. [Book Now](#) For more info visit [SEAI Workshops for Schools](#).
Guzzler is waiting for your call!

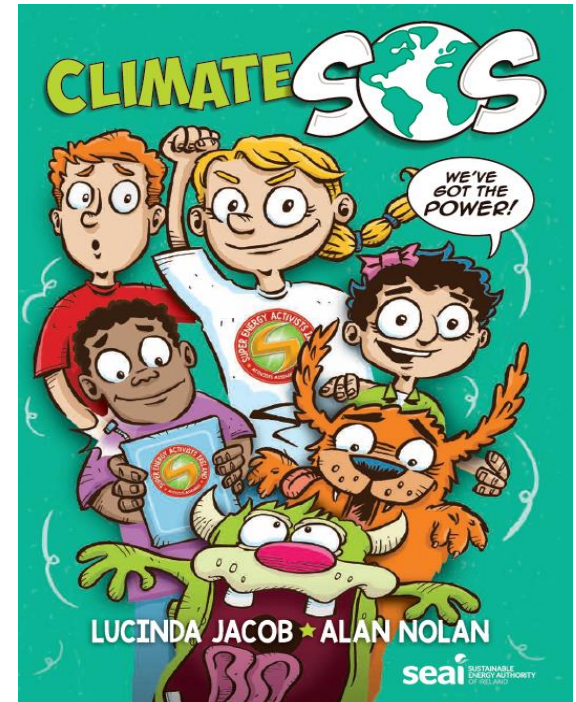
- www.seai.ie/schools

Workshops for teachers & students

- Online Primary and teacher CPD workshops available
- Outdoor workshops being developed
- Content of workshops: sustainable energy, climate change & how everyone can make a difference to the environment

Resources

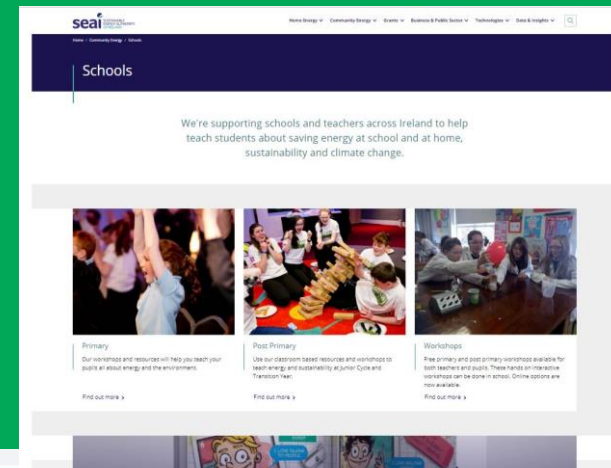
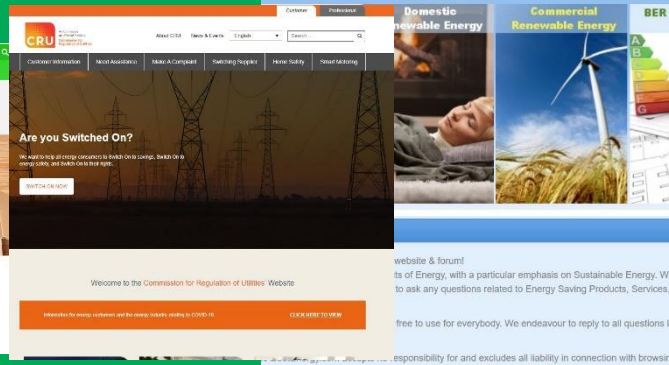
- Online & hard copy teaching resources for primary and post primary
- New 'Climate SOS' book available to order for Sr Primary Schools
- Many available in Irish
- Demonstration Videos showing how to carry out experiments



Useful online resources

Useful links:

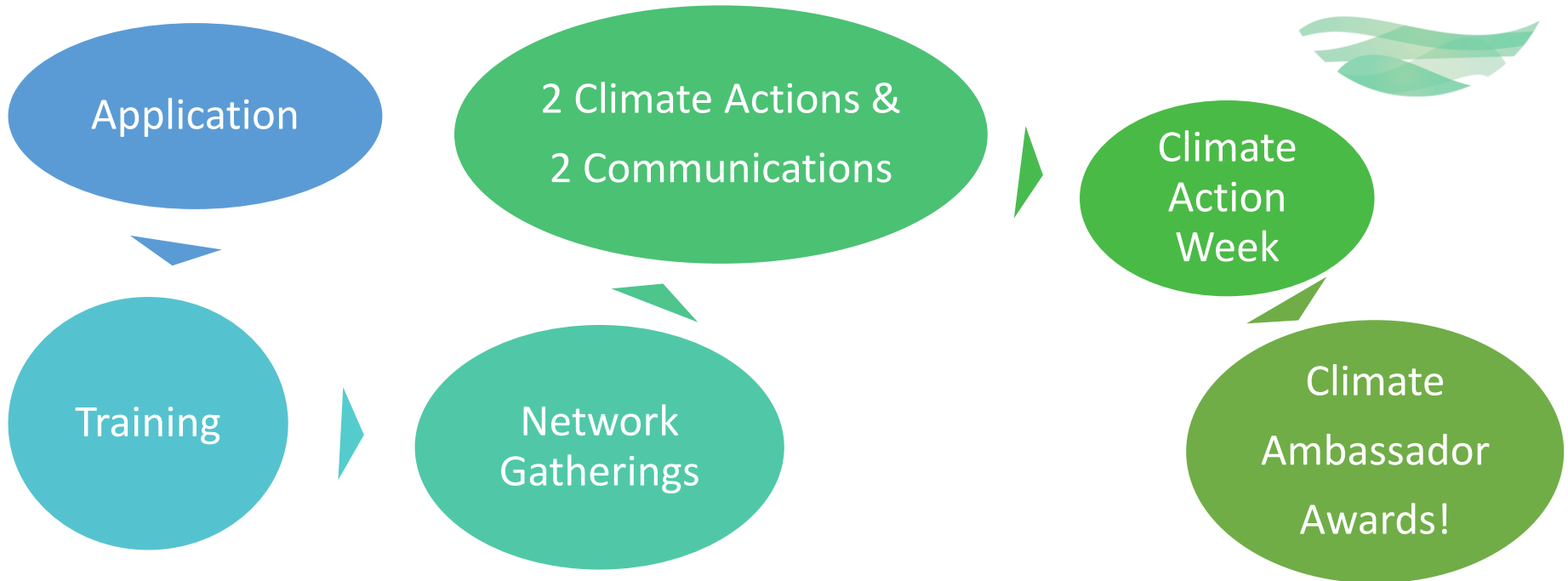
- Ask About Energy: www.askaboutenergy.com
- SEAI schools: www.seai.ie/Schools
- Energy in Education: www.energyineducation.ie/Energy_In_Education
- Commission for the Regulation of Utilities: www.cru.ie/
- mywaste.ie



Child Protection and Garda Vetting

- An Taisce's Child Protection Policies and Procedures are regularly reviewed and have recently been updated.
- A summary and link to these policies will be sent to all schools later in October
- Our Safeguarding Statement will be available shortly on our website
- Garda Vetting:
 - all An Taisce staff regularly working with children are vetted on a biennial basis
 - vetting to be renewed for all staff in November
 - schools may request a Joint Agreement to obtain vetting results
 - if any school wishes they can choose to vet our staff member themselves
 - For all queries or requests related to vetting please contact:
vetting@eeu.antaisce.org

Climate Ambassador Programme





Applications open from September 19th to October 23rd: www.climateambassador.ie

Instagram @climateambassador

Twitter @climate_ambass

Facebook @ClimateAmbassador

Gary Tyrrell gtyrrell@eeu.antaisce.org

Gráinne Ryan gryan@eeu.antaisce.org

Monica Mullins mmullins@eeu.antaisce.org

Young Reporters for the Environment

- YRE platforms student voices and their solutions for Climate Action across all themes - See our Exposure site for past entries.
- You can enter anytime. Entries accepted until April 2023.
- Chance to share in €1,500 prize fund!
- Free access to online skills courses – Article Writing, Videography, Photojournalism Skills
- Register now for 1st webinar 11th October with Sylvia Thompson – The Irish Times



How to Enter – YRE's 4 Steps

1. Uncover an environmental issue in your area
 2. Research a solution for it
 3. Create an article, photo or video to communicate your findings (as a group or individually)
 4. Share your work in your school, home and community
- Register here:
<https://forms.office.com/r/q0EG82h0dH>
 - Contact Eoin at yre@eeu.antaisce.org
 - [@yreireland](#) on Instagram



NEWSLETTER

<http://eepurl.com/gfU4Tr>

Green-Schools Newsletter Mailing List

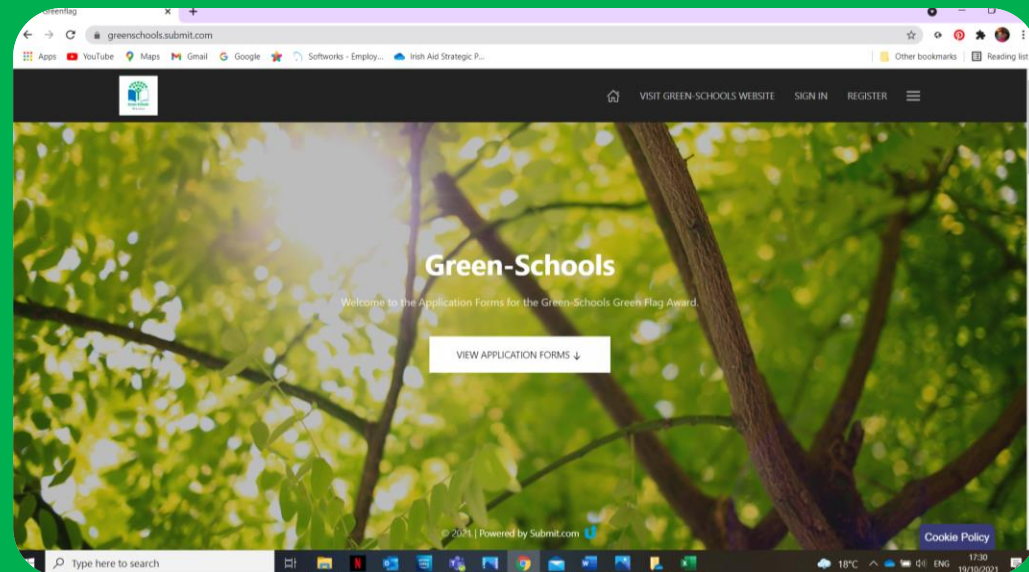
Sign up to the Green-Schools monthly newsletter to learn about good news stories and upcoming Green-Schools events

Email Address

First Name

Last Name

Green-Schools Website & Online Forms



Renewal Process

- **Online Application Form –**
 - to be submitted by
 - Friday the 24th of March 2023
- **Renewal visit can take place at any stage during Year 2 and these can still be facilitated remotely!**
- **National Awards Ceremony May 2023**
- **Flag raising ceremony**
 - Everyone involved
 - Wider Community
 - Celebrate!!!



Flag- Raising Ceremony

Celebrate!!!



Questions & Answers

- Thank you for your attention!



Questions?

Contact us

01-4002222

greenschools@antaisce.org