

# Climate Change

## Post-Primary



### Curriculum Links:

Geography (J.C. 1.6, 1.9, 2.6)

Science (J.C. 2.6, 2.7)

C.S.P.E (J.C. 2.2, 2.4, 2.9, 2.10)

Politics & Society (L.C. 3.3, 3.4, 8.1)

### **Introduction (15 mins)**

The following series of activities are suitable for all ages in the post-primary setting and centre on playing an interactive card game, creating a climate dictionary, hosting a climate conversation, and conducting some research. These activities can be facilitated in a variety of ways and could be implemented in any order, or you could simply choose to do one of them with your class.

- Split the class into tables of 6 or 8 – just keep it even.
- Start off by having a mini climate conversation. Using the pair and share technique, ask the class to discuss in pairs, what they think about climate change. **What images, words or phrases pop into your mind when you hear climate change?** There are no right or wrong answers here, just an exploration of initial impressions.
- After a minute or two ask each pair to share with their table what they think about climate change. Remind them to be practising active listening...
- After a couple of minutes ask for a volunteer from each table to feedback to the class what they discussed in their pair and then what others discussed at their table. **What was the most common word that came up in relation to climate change? Did anything surprise you? What would you like to know more about?**
- You could revisit this Climate Conversation in more detail with your class after playing Cards Against Climate Change, creating a Climate Dictionary or Conducting Research. See the full guide on page 4. Why not bring two classes together and ask trigger questions based on the following cross-curriculum links:

[Geography J.C. 1.6: Classify global climates, and analyse the factors that influence the climate in Ireland](#)

[Geography J.C. 2.6: Examine the causes and implications of climate change](#)

[Science J.C. 2.7: Illustrate how Earth processes and human factors influence Earth's climate, evaluate effects of climate change and initiatives that attempt to address those effects](#)

## Cards Against Climate Change (20-30 mins)

This game works best with tables of 6 to 8 people. Use smaller groups if they are distracted easily or larger groups if they can concentrate or have played this game before. It can also be played in pairs if you have a really big class and not enough cards for everyone to play individually. Be sure to print the cards double-sided!

Ask each table to do the following:

1. Decide who will be the Dealer by figuring out who travels to school the most sustainably and then deal 5 white cards per person.
2. Stack the green cards and spare white cards side by side in the middle.
3. Dealer starts the game by turning over a green card and reading aloud to their table.
4. The rest of the table chooses a white card to complete the sentence.
5. Dealer collects the chosen white cards, mixes them up a bit and then reads out each sentence in full (start & end!) and chooses a winning card (it could be the **funniest**, most **grammatically correct**, the one that makes the **most sense to them** etc.).
6. Put all the used white cards in a box (careful not to mix them up with the spare cards!) and give the green card to the winner.
7. Dealer gives everyone a replacement white card from the spare pile in the centre (**you must have 5 in your hand at all times**) and the game moves clockwise to the next player who turns over a green card and becomes the new Dealer...

**The aim of the game is to win as many green cards as you can!**

It's okay if they don't understand every card, as it's not really about knowing the 'right' answer at this stage, but having fun, getting engaged or hopefully interested in climate change. As you're walking around the card tables, you could follow up with the current Dealer by asking them to explain why they chose the winning card; if it's a person **who do you think they are, what is their job or if you could finish the sentence in any way, what would it be?!**



Download your complete deck of Cards Against Climate Change here: <https://greenschoolsireland.org/resources/>

**Climate Dictionary (30-40 mins)**

Start a Climate Dictionary for your class by asking students to share a word or phrase that came up in the card game. It could be a new word they had never heard of or something they aren't quite sure what it means in the context of climate change. Ask the class to work in groups and try to figure out what the words mean; they could use their school books, dictionaries, library or search online if they have access. Here's a few to get you started!

<b>Word/Phrase</b>	<b>Description</b>
Weather	
Climate	
Climate change	
Sustainable development	
Greenhouse gases	
Greenhouse effect	
Global warming	
Fossil fuels	
Emissions	
Ozone layer	
Montreal Protocol	
Renewable energy	
Carbon cycle	
Carbon footprint	
Water footprint	
Ocean acidification	
Coral bleaching	
Polluter pays principal	
Paris Agreement	
Carbon sink	

[C.S.P.E. J.C. 2.2: Consider a variety of definitions of development and devise your own definition for sustainable development](#)

## Climate Conversations and CAKE! (45 mins)

### We need to talk about climate change!

It seems so far away. So big an issue it doesn't bear thinking about; a problem for future generations. The biggest threat to justice and human rights of our time! And let's be real, it is really big. Yet solutions to this global challenge can be found close to home, and are happening now. We can be a part of this solution. The aim of a climate conversation is to come together with others, for a chat and a cup of tea, (maybe a slice of cake!) and explore how we can take action collectively for climate justice.

#### Step 1: Collaborate

The most important ingredients in an exciting conversation are its participants. The conversation can be as big or small as you want, but thinking about who you'd like to speak to is the first step. Who could you collaborate with to host a conversation in your school? Do you want it be internal in your class or could you invite local businesses, community members, tidy towns or local college representatives?

#### Step 2: Create the space

A climate conversation could take place as a coffee morning, a lunchtime gathering or any format that works for the people you are going to chat with. It should be a welcoming, informal and cosy space where conversations can flow and everyone's voices can be heard. It could be useful to have some large sheets of paper or a whiteboard to record key points of discussion.

#### Step 3: Hold the conversation

The aim of the climate conversation is to explore how we can collectively act on climate change. The conversation is a space to reflect personally and together. You can adapt and change the process to suit the group of people who come together for your conversation, but here's what we suggest:

**Welcome** everyone to the climate conversation and introduce the **principles of a good conversation**:

- We acknowledge one another as equals, we try to stay curious about each other
- We recognise that we need each other's help to become better listeners
- We slow down so we have time to think and reflect, we expect it to be messy at times
- We remember that conversation is the natural way humans think together

Source: Margaret Wheatly (2009: 33) *'Turning to one another: simple conversations to restore hope to the future'*.

- Invite people to spend two minutes **brainstorming** what comes to mind when they think about **climate change**, potentially including the media, baseline knowledge and hopes. If the group is large, ask people to share their thoughts in pairs first to help everyone feel comfortable speaking. Then invite people to share their thoughts together. Record any recurring themes or common words.
- Invite each person to jot down an answer to the question **'why do you think climate change is happening?'** Working in **pairs**, each person offers their answer and the other person probes and asks **'But why?'** The person answering should try to answer as many 'but whys' as possible. After each pair has done this, invite them to **share** their thoughts with the table or whole group and have a chat together. What were peoples starting points? Where did they end up? Try to record the **root causes** of climate change that the group identifies.
- Ask each person to take two minutes to think about where and how they see these roots in their own **life** and in their **community**. Invite everyone to share these **connections** and record them in two columns: 'personal' and 'community'. What are the **common themes or ideas**?
- What personal or local **actions** could the group take to address some of the root causes they have identified? After a group conversation invite each person to share their final thoughts. **Is there one change the entire group can make?** Link your group action plan with some of the following learning outcomes:

C.S.P.E. J.C. 2.4: Discuss three or more sustainable living strategies they can employ in their lives

C.S.P.E. J.C. 2.9: Analyse one global issue or challenge under the following headings: causes, consequences, impact and solutions

C.S.P.E. J.C. 2.10: Evaluate how they can contribute in responding to one world challenge

Politics & Society L.C. 3.3: The range of means of taking action at local, national or international level

Politics & Society L.C. 3.4: Identifying, evaluating and achieving personal and collective goals, including developing action plans

Politics & Society L.C. 8.1: Actions that address sustainable development

Thanks to the Young Friends of the Earth for sharing their guide on hosting a Climate Conversation!

## Climate Research (1-2 hours)

Using the following curriculum links as a guide, conduct a climate research project in groups and **present your vision on meeting Earth's current or future energy demands.**

Geography J.C. 1.9: Differentiate between the types of energy resources produced by the physical world

Science J.C. 2.6: Research different energy sources; formulate and communicate an informed view of ways that current and future energy needs on Earth can be met

### Questions to consider:

1. What are the pros and cons of renewable and non-renewable energy resources?
2. What impact will climate change have for Ireland?
3. Where does Ireland source its energy to meet the current demand?
4. What is the Paris Agreement?
5. How will the world meet the predicted energy demand in 2050?

### Useful links

The Climate Ambassador programme is a brand new Irish initiative designed to train and support individuals in taking climate action.

<http://climateambassador.ie/resources/>

The Climate Ambassador website also has a fantastic page of suggestions to support individuals in taking climate action in their school, college or community.

<http://climateambassador.ie/actions/>

The Environmental Protection Agency is responsible for the protection of Ireland's environment including licensing, law, planning, education, monitoring, regulation, research and management.

<https://www.epa.ie/irelandsenvironment/climate/>

NASA is one of the world's leading climate research agencies and the Global Climate Change website aims to give the public accurate news and visuals of the Earth's changing climate.

<https://climate.nasa.gov/evidence/>

### Presentation tips

After conducting your research, it's time to consider your method of presentation. **How will you present your vision?** You could write a persuasive essay, or present your research on a poster or in prezzi? You could even sing a song, write a poem, rap or perform a sketch.

- **Experiential:** What story are you trying to tell?
- **Meaningful:** What is the purpose of your research project?
- **Engaging:** Who is your target audience and what do they care about?
- **Hopeful:** What is your call to action?

Share your research far and wide! Be sure to tag [@GreenSchoolsIre](#) and [@climate\\_ambass](#) on Twitter or Facebook and let us know if you found this resource useful.

# INTRODUCTION

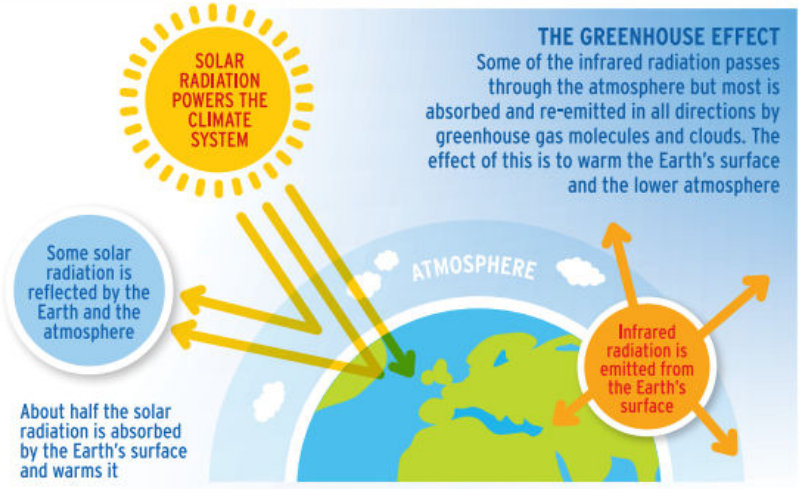
**CO<sub>2</sub>**  
Carbon Dioxide

**CH<sub>4</sub>**  
Methane

**N<sub>2</sub>O**  
Nitrous Oxide

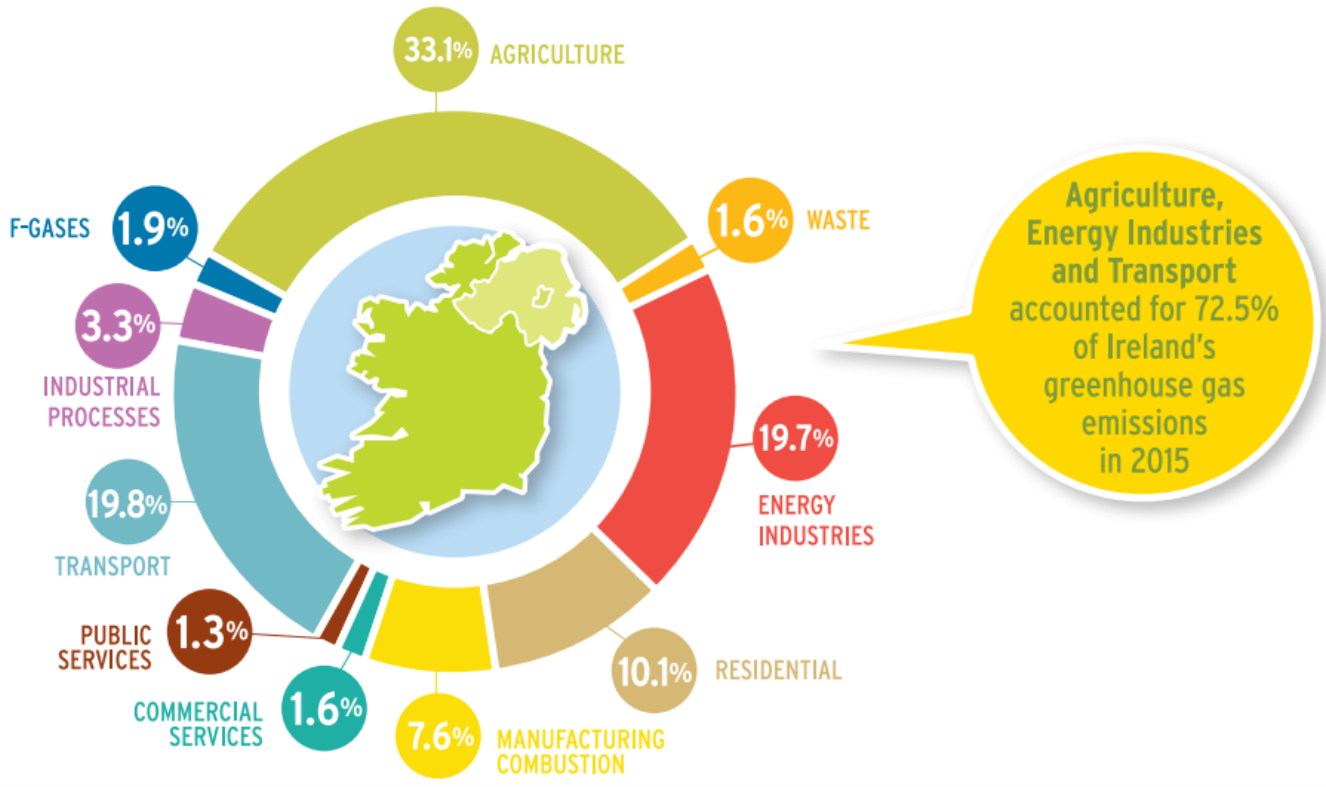
**HFC, PFC,  
SF<sub>6</sub> and NF<sub>3</sub>**  
Fluorinated Gases

Increased concentrations of heat-trapping greenhouse gases has increased the amount of energy being trapped in the climate system

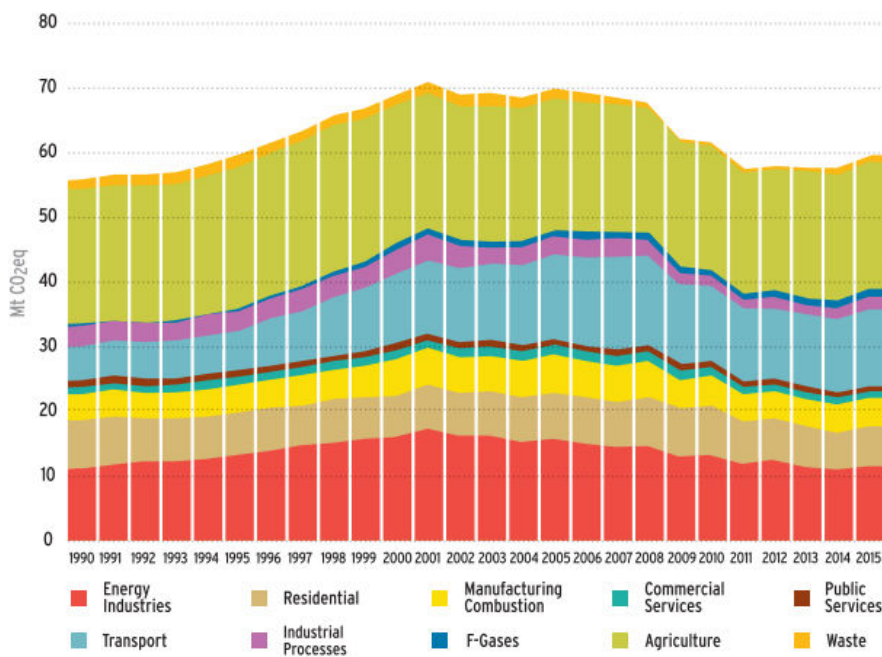


This causes global warming and gives rise to Earth system changes known as climate change

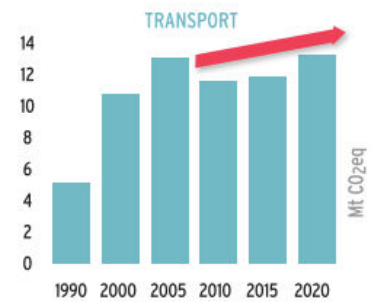
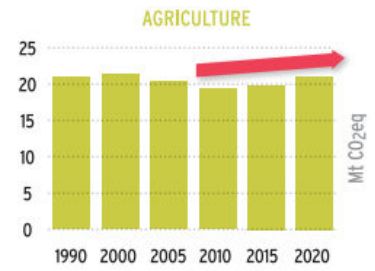
# SOURCES OF GREENHOUSE GASES



# TRENDS IN GREENHOUSE GASES



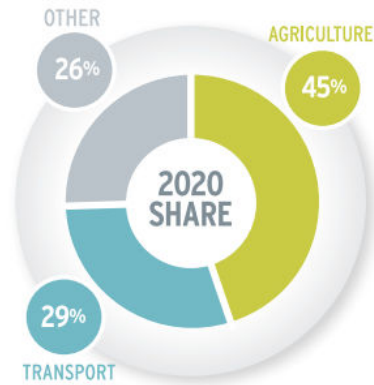
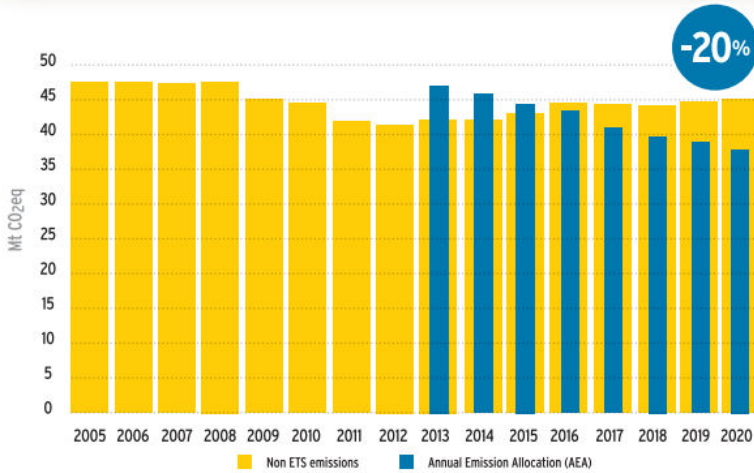
Ireland's greenhouse gas emissions peaked in 2001 and have decreased by 18.8% over the 13 year period to 2014. 2015 saw an increase of 3.7%



Emission projections show key sectors increasing on current levels under the With Additional Measures scenario which assumes further implementation of Government policies and measures based on current progress.

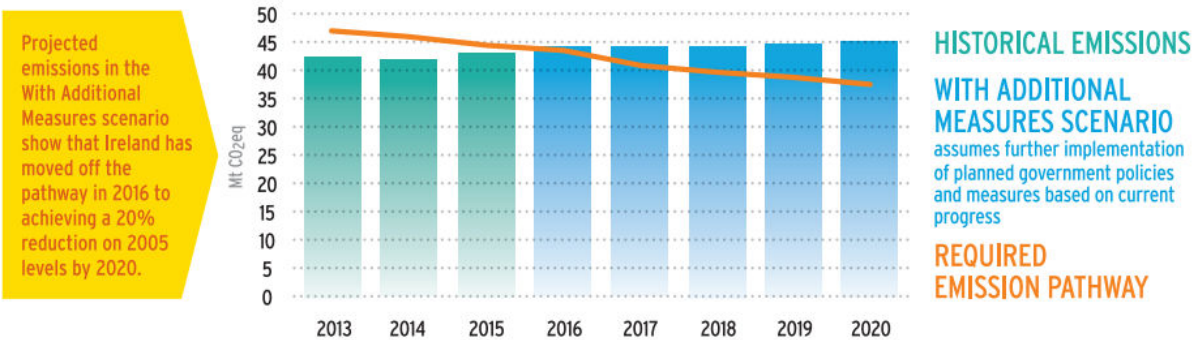
# NON-EMISSIONS TRADING SECTOR - 2020 TARGETS

Separate EU 2020 targets apply to the non-emissions trading sectors (agriculture, transport, residential, non-energy intensive industry, F-gases, waste, commercial services and public services) and the EU emissions trading sectors (power generation and heavy industry)



Ireland is required to reduce emissions from the non-emissions trading sectors - agriculture, transport, residential, non-energy intensive industry, F-gases, waste, commercial services and public services. The target is a 20% reduction by 2020 compared with 2005 including a reduction pathway between 2013 and 2020.

Separate EU 2020 targets apply to the non-emissions trading sectors (agriculture, transport, residential, non-energy intensive industry, F-gases, waste, commercial services and public services) and the EU emissions trading sectors (power generation and heavy industry)



Projected emissions in the With Additional Measures scenario show that Ireland has moved off the pathway in 2016 to achieving a 20% reduction on 2005 levels by 2020.

**HISTORICAL EMISSIONS**  
**WITH ADDITIONAL MEASURES SCENARIO** assumes further implementation of planned government policies and measures based on current progress  
**REQUIRED EMISSION PATHWAY**

## IN CONCLUSION

We must invest in structural and behavioural change to enable the transition to carbon neutral, climate resilient Ireland. These changes include the rapid decarbonisation of energy and transport and the adoption of sustainable food production, management and consumption systems.



<http://www.epa.ie/climate/emissionsinventoriesandprojections>

Source: [https://www.epa.ie/media/infographic\\_climate\\_July2017.pdf](https://www.epa.ie/media/infographic_climate_July2017.pdf)