

Tips for Helping Spot AI Within Text

This document has been created to bring together current knowledge on AI-content generator tools, in one helpful space. We hope to enable those reading to better distinguish text written by humans, and that written by an AI-content generator tool, as a first port of call before trying to gather further evidence.

So far, content in submissions that have heavily involved use of AI-content generator tools has been seen predominantly in Question 1 on our Participant Form. This document mostly refers to that question as an example and a base when discussing the use of these tools. Please refer to this document and these tips as a first port of call, before taking any further steps, such as using AI detection software.

Spotting AI use in Question 1 (reaching zero carbon)

Structure

Sentence types

AI text is generated word by word – like when you keep tapping the recommended word on your phone to create a gibberish sentence. This usually leads to very repetitive sentence structures with little change in tone. Here is an example of AI generated text.

Coffee beans, the seeds of the Coffea plant, are renowned for their integral role in the global beverage culture. Originating from regions known as the "Coffee Belt," spanning equatorial zones around the globe, these beans come in diverse varieties, each imbued with unique flavor nuances. Arabica and Robusta are the two primary species cultivated commercially, with Arabica prized for its nuanced flavors and Robusta valued for its robustness and caffeine content.

The journey of coffee beans begins with cultivation, where factors such as altitude, soil type, and climate, intricately influence their development. After harvesting, beans undergo processing, which can be either wet or dry, to remove the outer layers and reveal the coveted green beans within. Subsequently, these green beans undergo roasting, a transformative process where they develop their characteristic aroma, flavor, and color profiles.

I've highlighted above a very common sentence structure that occurs with ChatGPT. ChatGPT loves to add in clauses which, usually, add very little information to the main sentence. To recognise these sentences, imagine the yellow part has been removed – the sentence still makes sense without this clause. This is also a common writing technique in humans, and it doesn't guarantee that the text is AI-generated. But if you see this sentence type popping up again and again, it might be a sign that AI has been used.

Following on from this point; something that you'll very rarely see in AI-generated text is short sentences. As ChatGPT writes its sentences one word at a time, it's hard for it to end a sentence after just a few words. The shortest sentence in the text above is 19 words long.... Here's an example text where I have prompted ChatGPT to write with a variety of sentence structures.

Coffee, a beloved beverage worldwide, originates from the roasted seeds of the Coffea plant, offering a stimulating jolt due to its high caffeine content. Its rich aroma and bold flavor make it a morning ritual for many. Whether enjoyed black or with milk and sugar, coffee provides a comforting warmth and a burst of energy to kickstart the day. Cultivated in tropical regions, coffee beans undergo meticulous processing and roasting to unlock their full potential, resulting in a diverse range of blends and brews. From espresso shots to creamy lattes, coffee delights the senses with its versatility and complexity. Whether sipped leisurely in a cozy café or hastily gulped down on a busy morning commute, coffee remains a cherished companion in daily life, fueling productivity and fostering connections with each invigorating sip.

This time, one short sentence has been included – even then, it is still 13 words long. ChatGPT has still included the sentence type we discussed above twice, again illustrating how frequently it is used.

Formatting

Although we often see learners completing Question 1 using bullet points, AI will do this to the max! There are a few subtle differences that you can look out for to spot when AI has been used though.

AI will often use subheadings and numbers (see right) when Question 1 is used as a prompt. If the learner has directly copied this over to their evidence form, another thing to look out for is **bold subheadings** and numbers rather than bullet points. Some AI text generators (e.g. Chat GPT) is big on colons, especially after subheadings, so this is another area of formatting that you can look for if a learner has directly copied from an AI text generator.

- 1. Transition to Renewable Energy:** We must accelerate the shift from fossil fuels to renewable energy sources like solar, wind, hydro, and geothermal power. Investing in renewable energy infrastructure and phasing out subsidies for fossil fuels are essential steps.
- 2. Energy Efficiency:** Improving energy efficiency across all sectors, including transportation, buildings, and industry, can significantly reduce carbon emissions. This involves implementing energy-saving technologies, upgrading infrastructure, and promoting energy-efficient practices.
- 3. Electrification of Transportation:** Transitioning from internal combustion engine vehicles to electric vehicles (EVs) can greatly reduce carbon emissions from the transportation sector. This requires expanding EV infrastructure, incentivizing EV adoption, and investing in clean public transportation systems.
- 4. Decarbonizing Industry:** Industrial processes are major contributors to carbon emissions. Implementing cleaner technologies, such as carbon capture and storage (CCS), hydrogen-based processes, and sustainable manufacturing practices, can help decarbonize industries like manufacturing, agriculture, and construction.
- 5. Carbon Pricing and Regulations:** Implementing carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, can provide economic incentives for businesses and individuals to reduce emissions. Additionally, enacting stringent environmental regulations and standards can help enforce emission reductions across various sectors.

Achieving zero carbon emissions is a monumental task that requires a multifaceted approach involving changes at individual, societal, and governmental levels. Here are some crucial changes we need to make:

Finally, the AI-generated text will almost always contain a small section before and after the bullet points where it re-explains the question – see below for a classic example of this.

AI text generators like patterns so they will often use a similar structure throughout. For example, the screenshot of the text above uses two sentences to summarise each subheading. In the screenshot below, the AI text generator has used 3 bullet points each with a sentence summarising the subheading (and does this throughout the piece of text).

1. Transition to Renewable Energy

- **Increase Renewable Energy Production:** Expand the use of solar, wind, hydro, and geothermal energy sources.
- **Upgrade Grid Infrastructure:** Modernize the electrical grid to accommodate decentralized and intermittent renewable energy sources.
- **Energy Storage Solutions:** Invest in large-scale battery storage and other technologies to store renewable energy for use when production is low.

2. Improve Energy Efficiency

- **Building Standards:** Implement and enforce stricter energy efficiency standards for new buildings and retrofit existing buildings.
- **Appliance Efficiency:** Promote the use of energy-efficient appliances and lighting.
- **Industrial Processes:** Enhance energy efficiency in industrial processes through technology upgrades and best practices.

You might also notice that AI generators are very consistent in their capitalisation of the subheadings. There are various style guides on the internet for heading and subheading capitalisation, but AI generators seem to follow the general rules that words in subheadings that aren't capitalised include:

- Articles (e.g. a)
- Coordinating conjunctions (e.g. but)
- Shorter words (e.g. by)

So, for example in the subheading, 'Transition to Renewable Energy', everything but 'to' is capitalised because 'to' is a shorter word. Humans might not always be consistent with this, and they might forget to capitalise their subheadings consistently like an AI generator would.

Language

Formal language

AI text generators tend to write in a more formal, impersonal way. When an AI text generator mentions something that could be an acronym, it will very likely provide the phrase followed by its acronym in brackets. Some examples include:

- “carbon capture and storage (CCS)”
- “electric vehicles (EVs)”

This is the ‘proper’ way to introduce an acronym into a piece of writing. Humans, of course, will do this but more likely in professional writing contexts (not necessarily this Carbon Literacy evidence form). When writing their answer to Q1 a learner is more likely to choose to write either ‘EV’ or ‘electric vehicles’, but it’s unlikely they’ll provide both at once like the AI text generators do.

AI generators also overuse words and phrases when producing text (despite being trained on large datasets). Some overused terms that might be present in an AI-written answer to Q1 include:

- Multifaceted/multi-faceted
- Foster
- Crucial
- Hard-to-abate
- Transformative
- Utilise

Looking for humanity in the writing

Humans are imperfect but they’re also creative and expressive. AI is usually the opposite.

When humans write, they can make mistakes. They might miss ‘the’ or ‘to’ as their mind jumps ahead to the next part of the sentence, or they might mess up their grammar. AI is very good at writing things pretty much perfectly, ensuring its grammar is correct and no filler words are missed out. If you suspect that a piece of writing is AI, then perfect grammar/spelling is another indicator. Obviously, we need to be cautious with this because a learner could’ve used Grammarly or a spell checker to correct their writing.

An edge that humans have over AI though is our creativity and expressiveness. This might be a little harder to find when answering Q1, but any emotions or personal opinions expressed in the answer could point to a human writer. AI tends to be quite monotonous and generic in its approach to writing. It’ll stick to a uniform tone throughout its writing and won’t deviate like a human might.

The text below demonstrates the uniform, monotonous tone of the AI. It also shows how AI struggles with context. The sentence, “Notable for its landmarks such as Buckingham Palace and Stonehenge, the UK left the EU in 2020” is unlikely to be written by a human since the landmarks of the UK and Brexit are unrelated. This type of contextual mismatch is down to the style of predictive text typing that AI uses to create a piece of writing (as shared earlier).

The United Kingdom (UK) is a constitutional monarchy and parliamentary democracy comprising England, Scotland, Wales, and Northern Ireland, with London as its capital. With a population of about 67 million, it has a highly developed economy and is a global financial hub. Historically rich, the UK has contributed significantly to literature, science, and culture, producing icons like Shakespeare and Newton. Notable for its landmarks such as Buckingham Palace and Stonehenge, the UK left the EU in 2020. It remains a key player in international politics, being a permanent UN Security Council member and a founding member of NATO and the Commonwealth.



One final thing to assess when looking for humanity is the form as a whole – is the same writing style present throughout? You would expect that if a human wrote both their answer to Q1 and their actions then their voice would be similar throughout their form.

Again, with this indicator, we have to exercise caution as the learner might use slightly different writing styles due to the nature of the different parts of the form, but significant differences could be another sign of AI use.

Also, less commonly, you might see a form where AI has been used in the actions section so in this case the writing would be relatively uniform across the whole form, but the other telltale signs of AI, noted in this document, should be present if this is the case.

'American' English

The default language for most (if not all) AI generators is 'American English', which means you could look out for words like these:

- Public transit
- Incentivize
- Modernize
- Decarbonize
- Behavioral
- Carpooling
- Trash

However, we do need to be careful about using this outside of UK-based training, or for international companies (where American English might be more common/the norm). Even UK users might use programmes that will correct their text into American English.

Also, if a user is well-versed in AI, they might be able to prompt the AI to produce British English text. So, looking out for American English should be considered an additional indicator pointing towards the potential use of AI.

Technical language

The AI text generators might also use overly technical terms that learners generally won't know (and are unlikely to have heard in their course). This could include words/phrases like 'cap-and-trade' (which is more relevant in governmental spaces), 'precision agriculture' (which is more relevant to farming/environmental areas), or 'hard-to-abate' (also a more technical governmental term). Since Carbon Literacy courses are tailored to different audiences, some of these words might be used, but for other courses these words could be overly technical. Sometimes you might be able to look at the type of course and what audience it is tailored towards to understand if the learner is likely to have come across these words before. Again, you might have to be cautious as the learner might be well read (and you won't know the specific terms used in any one particular course).

Sourcing

Surprisingly, AI generators can also provide sources for the writing they produce (but they might do this in different ways).

When ChatGPT was asked to provide sources, it used this method:

- **Methane Reduction:** Implement measures to reduce methane emissions from livestock and rice paddies ([UNEP, 2021](#)).

When CoPilot was asked to provide sources, it used this method:

3. **Address Hard-to-Abate Sectors:** These include heavy industrial sectors such as steel, cement, chemicals, and aluminium, and long-distance sectors such as shipping, aviation, and long-distance road transport ¹.

Both methods look professional and, at first glance, the sources look legitimate.

If sources are provided, make sure to check these because sometimes AI generators cite things using incorrect links. Other times, the sources might say something different to the point they're meant to back up.

In other cases, rather than paraphrasing the source, the AI might copy a section of the source word-for-word. For example, CoPilot (an AI text generator) wrote the following as part of an answer to Q1:

1. **Decarbonize Electricity Generation:** The collapsing cost of renewable electricity and batteries means that the world can now plan to decarbonize electricity generation far more rapidly ¹.

But this answer is a quote pulled directly from the text that it's sourced from:

This article is part of:

[Sustainable Development Impact Summit](#)

The collapsing cost of renewable electricity and batteries means that the world can now plan to decarbonize electricity generation far more rapidly, and at a lower economic cost than seemed possible 10 years ago. Via green

Normally, if a human included sources in their writing, they would paraphrase or they would use quotation marks to demonstrate that they've pulled a quote from a reference. This could be a sign of AI use.

If you think the answer to Q1 is likely to be written by AI and there are sources included within the text, it's a good idea to check every source to see if they all make sense.

A note on AI detectors

AI detectors (such as Scribbr, GPTZero and originality.ai) work by analysing the likelihood that a word comes before/after another word. The detectors look for this throughout the entire piece of text and if the word order/choice is more likely, then the piece of text will receive a higher score and would therefore be deemed more likely to be AI.

This, unfortunately, is not a very reliable method and it can lead to high numbers of false positives and false negatives. In some cases, it has also been found that AI detectors have a bias against text written by non-native English writers (and so they're more likely to show a false positive result for original writing by non-native writers).

Therefore, AI detectors should be used with caution and only when we are already confident that the text has been written by AI.

AI Examples

Example 1

[Chat GPT 4.0]

Prompt 1: "What are the most important changes we need to make as a society to reach zero carbon?"

Answer: "Reaching zero carbon emissions is a complex and multifaceted challenge that requires coordinated efforts across various sectors of society. Here are the most important changes that need to be made:

1. Transition to Renewable Energy

Increase Renewable Energy Production: Expand the use of solar, wind, hydro, and geothermal energy sources.

Upgrade Grid Infrastructure: Modernize the electrical grid to accommodate decentralized and intermittent renewable energy sources.

Energy Storage Solutions: Invest in large-scale battery storage and other technologies to store renewable energy for use when production is low.

2. Improve Energy Efficiency

Building Standards: Implement and enforce stricter energy efficiency standards for new buildings and retrofit existing buildings.

Appliance Efficiency: Promote the use of energy-efficient appliances and lighting.

Industrial Processes: Enhance energy efficiency in industrial processes through technology upgrades and best practices.

3. Electrification of Transport

Electric Vehicles (EVs): Encourage the adoption of electric vehicles through incentives, subsidies, and infrastructure development.

Public Transport: Expand and improve public transportation networks to reduce reliance on private vehicles.

Alternative Fuels: Develop and promote the use of hydrogen and other sustainable fuels for transport sectors that are hard to electrify, such as aviation and shipping.

4. Decarbonize Industry

Carbon Capture and Storage (CCS): Invest in and deploy CCS technology to capture emissions from industrial processes.

Green Hydrogen: Develop green hydrogen production methods and infrastructure for use in heavy industries like steel and cement manufacturing.

Circular Economy: Promote recycling, waste reduction, and the reuse of materials to minimize the carbon footprint of industrial activities.

5. Sustainable Agriculture and Land Use

Regenerative Agriculture: Promote farming practices that enhance soil health, increase biodiversity, and sequester carbon.

Reforestation and Afforestation: Increase forest cover through tree planting and restoring degraded lands.

Methane Reduction: Implement measures to reduce methane emissions from livestock and rice paddies.

6. Policy and Governance

Carbon Pricing: Implement carbon taxes or cap-and-trade systems to incentivize emissions reductions.

Subsidy Reforms: Phase out fossil fuel subsidies and redirect support towards clean energy technologies.

International Cooperation: Strengthen international agreements and cooperation on climate action.

7. Behavioral Changes and Public Engagement

Consumer Choices: Encourage sustainable consumption habits, such as reducing meat consumption, minimizing waste, and choosing eco-friendly products.

Education and Awareness: Increase public awareness about climate change and the importance of reducing carbon footprints.

Community Initiatives: Support community-led sustainability projects and local climate action initiatives.

8. Research and Innovation

R&D Investment: Increase investment in research and development of new technologies for emissions reduction.

Pilot Projects: Implement and scale pilot projects to test innovative solutions in real-world settings.

Collaboration: Foster collaboration between governments, businesses, and academia to accelerate technological advancements.

9. Financial Sector Reform

Sustainable Finance: Promote green financing and investment in sustainable projects through incentives and regulatory measures.

Divestment from Fossil Fuels: Encourage divestment from fossil fuel industries and reallocate funds to renewable energy and other low-carbon technologies.

Risk Assessment: Incorporate climate risk assessments into financial decision-making processes.

Implementing these changes requires a comprehensive and collaborative approach involving governments, businesses, and individuals. By addressing these key areas, society can make significant strides towards achieving zero carbon emissions and mitigating the impacts of climate change.”

[Chat GPT 4.0]

Prompt 1: “What do you think are the most important changes we need to make as a society to reach zero carbon? Please write in first person.”

Reaching zero carbon as a society requires a multi-faceted approach, involving significant changes across various sectors. Here are the key areas I believe we need to focus on:

1. **Transition to Renewable Energy:**
 - We need to aggressively phase out fossil fuels and invest in renewable energy sources such as solar, wind, and hydropower. This involves both large-scale infrastructure projects and incentivizing smaller, decentralized renewable energy installations for homes and businesses.
2. **Improve Energy Efficiency:**
 - Enhancing energy efficiency across all sectors can drastically reduce carbon emissions. This includes retrofitting buildings with better insulation, using energy-efficient appliances, and adopting smart grids to optimize energy use.
3. **Electrify Transportation:**
 - Shifting from internal combustion engine vehicles to electric vehicles (EVs) is crucial. This requires expanding the EV charging infrastructure, providing incentives for EV purchases, and investing in public transportation systems to reduce the reliance on personal vehicles.
4. **Sustainable Agriculture and Land Use:**

- Agriculture needs to adopt sustainable practices, such as regenerative farming, reducing methane emissions from livestock, and minimizing deforestation. Protecting and restoring natural carbon sinks like forests, wetlands, and grasslands is also essential.
5. **Circular Economy:**
 - We need to move towards a circular economy where products are designed for longevity, repairability, and recyclability. Reducing waste, reusing materials, and recycling can significantly cut down on the carbon footprint of manufacturing and consumption.
 6. **Carbon Pricing:**
 - Implementing carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, can provide economic incentives to reduce emissions. This can drive innovation and investment in low-carbon technologies.
 7. **Behavioral Changes:**
 - As individuals, adopting more sustainable lifestyles can collectively make a big difference. This includes reducing meat consumption, minimizing waste, using public transport, and supporting eco-friendly products and companies.
 8. **Policy and Governance:**
 - Governments need to enact and enforce policies that support the transition to a low-carbon economy. This includes setting ambitious emission reduction targets, subsidizing clean energy, and phasing out subsidies for fossil fuels.
 9. **Investment in Innovation:**
 - Continuous investment in research and development of new technologies that can capture and store carbon, improve energy efficiency, and create sustainable materials is crucial for long-term success.
 10. **Education and Awareness:**
 - Educating the public about the importance of reducing carbon emissions and how they can contribute is vital. Awareness campaigns can help shift public opinion and drive collective action towards sustainability.

By addressing these areas with urgency and commitment, we can work towards achieving a zero-carbon future. It will require collaboration between governments, businesses, communities, and individuals to make this vision a reality.

Example 2

[Microsoft Copilot, using 'precise' mode]

Prompt: "What are the most important changes we need to make as a society to reach zero carbon?"

Answer:

"Reaching zero carbon emissions is a complex task that requires changes across various sectors of society. Here are some of the most important changes we need to make:

1. Decarbonize Electricity Generation: The collapsing cost of renewable electricity and batteries means that we can now plan to decarbonize electricity generation far more rapidly, and at a lower economic cost than seemed possible 10 years ago¹.
2. Green Electrification: Via green electrification, we can achieve zero carbon in many sectors of the economy – such as most of the manufacturing, residential heating, and road transport¹.
3. Address Hard-to-Abate Sectors: These include heavy industrial sectors such as steel, cement, chemicals, and aluminium, and long-distance sectors such as shipping, aviation, and long-distance road transport¹.
4. Invest in Clean Energy and Green Technology: The UK's Net Zero Strategy, for example, outlines measures to transition to a green and sustainable future, helping businesses and consumers to move to clean power².
5. Lifestyle Changes: This could include taking fewer flights, reducing energy use, improving home insulation and energy efficiency, switching to electric vehicles, replacing gas central heating with electric systems such as heat pumps, and eating less red meat³⁴.
6. Societal Changes: Stricter rules on lobbying, a phasing out of fossil fuels, greater collaboration between scientific disciplines, fair taxation on industries resulting in disproportionate costs to environmental/public health, tackling food waste, banning green marketing claims unsupported by meaningful evidence and impact, accelerating infrastructure investments in the electric grid and mobility, government-backed funding for Greentech startups, greater support for community energy projects⁵.

Remember, every small change can have a big impact. It's a collective effort, and everyone has a role to play in achieving a zero-carbon society."

Example 2b

[Microsoft Copilot, using 'precise' mode]

Prompt: "Can you answer the question above [I asked this after the prompt in 2a] but in less than 250 words please."

Answer: "To reach zero carbon, we need to decarbonize electricity generation and electrify sectors like manufacturing, residential heating, and road transport. We must address hard-to-abate sectors like heavy industry and long-distance transport. Investment in clean energy and green technology is crucial. Lifestyle changes such as reducing flights, improving home insulation, switching to electric vehicles, and eating less red meat are needed. Societal changes include stricter rules on lobbying, phasing out fossil fuels, fair taxation on polluting industries, tackling food waste, banning unsupported green marketing claims, and accelerating infrastructure investments."