Web Based Explorable Explanation

Deliverable 4.4

Document Information

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Table of Contents

1. About the Web-Based Explorable Explanation

The 4C Explorable Explanation is an interactive webpage, which visualises some of the project results. It can be found at https://explorable.4c-carbon.eu/, and is accessible from the 4C project's website under the "Resources" menu.

The visualisations included in the Explorable Explanation aim at facilitating the understanding of scientific concepts investigated in the project for non-technical audiences, such as policymakers and the interested public.

This deliverable (D4.4) reports on the basic information related to the development and completion of this task (T4.3.4) and provides a summary of the Explorable Explanation content and visualisations.

2. Development

The 4C Explorable Explanation was designed and developed through the collaborative effort of user experience, data visualisation and communication experts at the Barcelona Supercomputing Center, with contributions from the project researchers who provided data and feedback.

The design process began at the end of 2021, and involved user experience research, collecting relevant resources, and carrying out several co-creation meetings to define the structure, content, visualisations and overall format of the explorable explanation. The objective of the deliverable considered was to explain the concepts behind the project and showcase important results, targeting a broad audience and policymakers. Following the design of the visualisations, the "storyline" and text of the explorable was prepared. The visual identity of the explorable was also developed based on the project's visual identity.

Feedback meetings were carried out periodically with project partners to obtain feedback and the necessary data.

3. Status: Published

The web-based Explorable Explanation webpage was made live in 2023, and is now available at the following link: https://explorable.4c-carbon.eu/

The data behind the visualisations will be updated (where applicable) based on the results made available during the last period of the project. For ease of reference, the content is summarised in the following section.

4. Content summary

At the top of the 4C Explorable Explanation webpage appears the title "***CO₂ Evolution***", with the following subtitle: "*The road to our future climate: How are CO₂ emissions affecting the Earth? Which climate actions are you ready to take*?".

The web-based explorable explores the CO_2 and temperature evolution in the past, present and future in an attempt to shed light on the expected changes and encourage further action. It includes a general introduction, followed by three sections: Past & Present, Near Term, and Long Term, which can be navigated from the top right of the page.
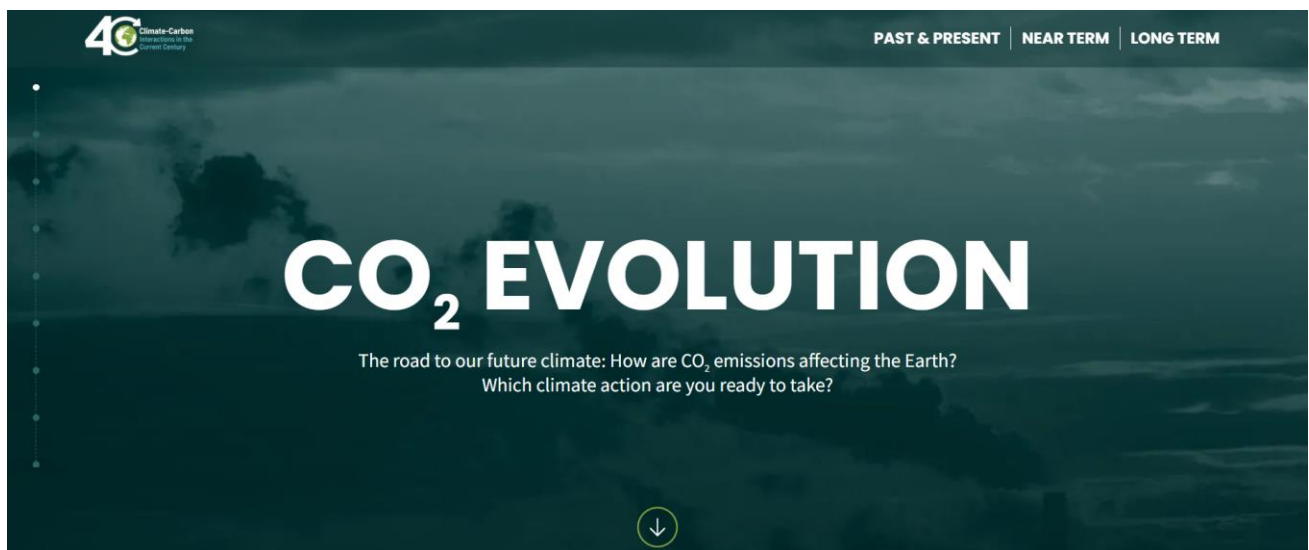
Figure 1. Top screen of the 4C Explorable Explanation webpage.

Each section contains interactive graphs that visualise data based on project results, as well as a number of other sources, such as the Global Carbon Budget. The visualisations cover the topics listed below.

Past & Present

- How did CO_2 emissions shape our climate?
- Which are the emission sources of the top emitting countries?
- What is the role of natural variability?
- How much more CO_2 can still be emitted?
- What are the sources and sinks of CO_2 emissions?
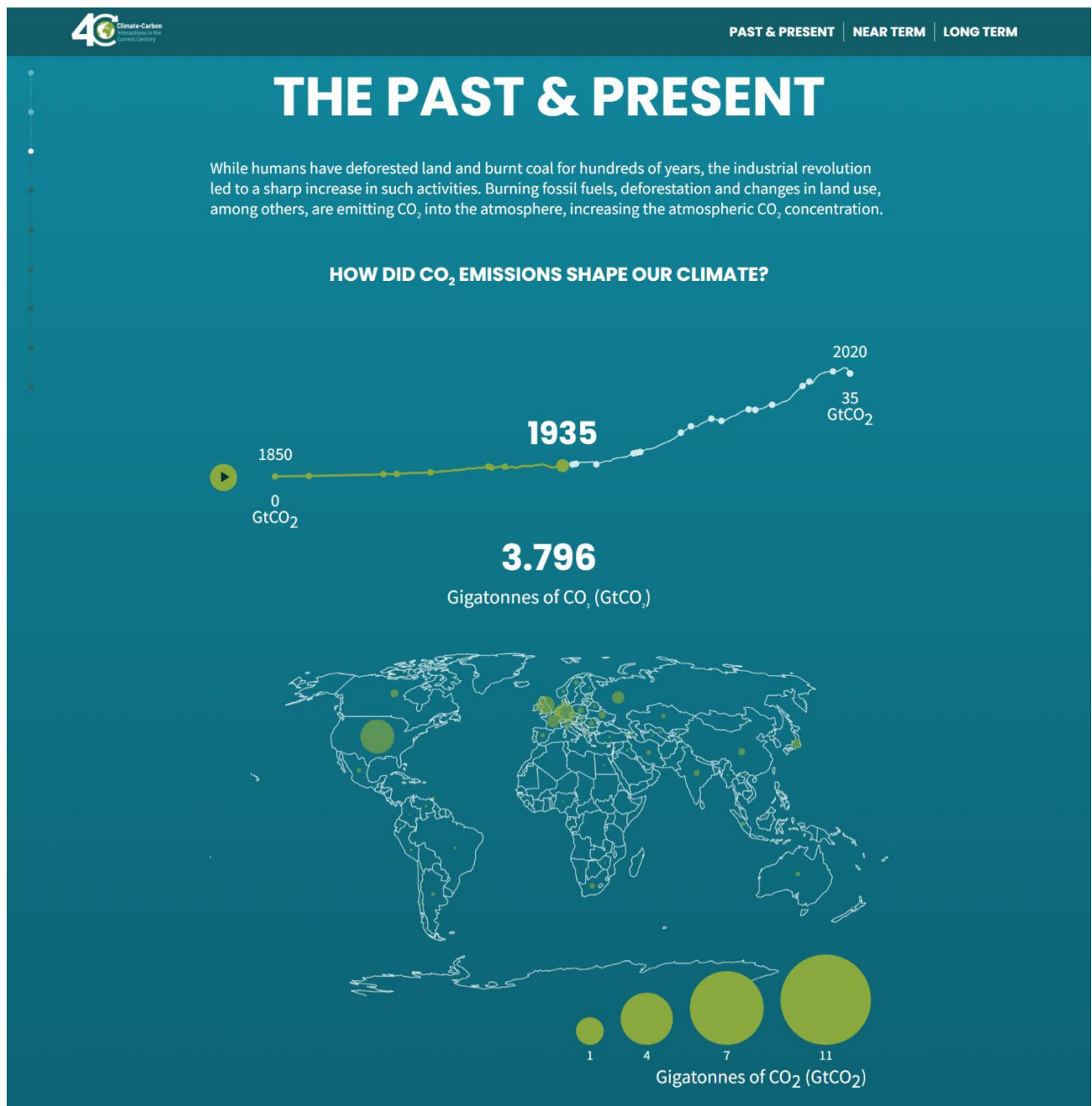- How is the global temperature changing?

Figure 2. Example of visualisation included in the Past & Present section.

Near Term

- Prediction for 2022 to 2026 of global temperature increase
- Prediction for 2022 to 2026 of atmospheric CO_2 growth rate
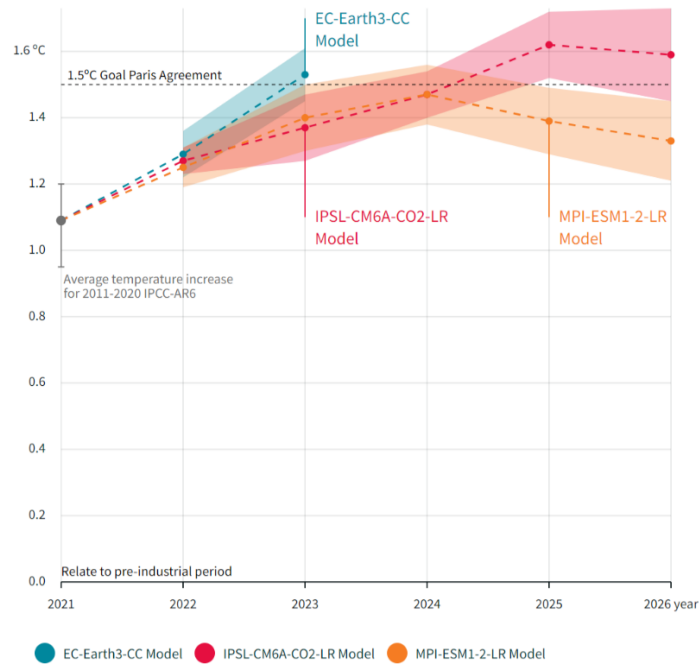
Figure 3. Visualisation included in the Near Term section.

Long Term

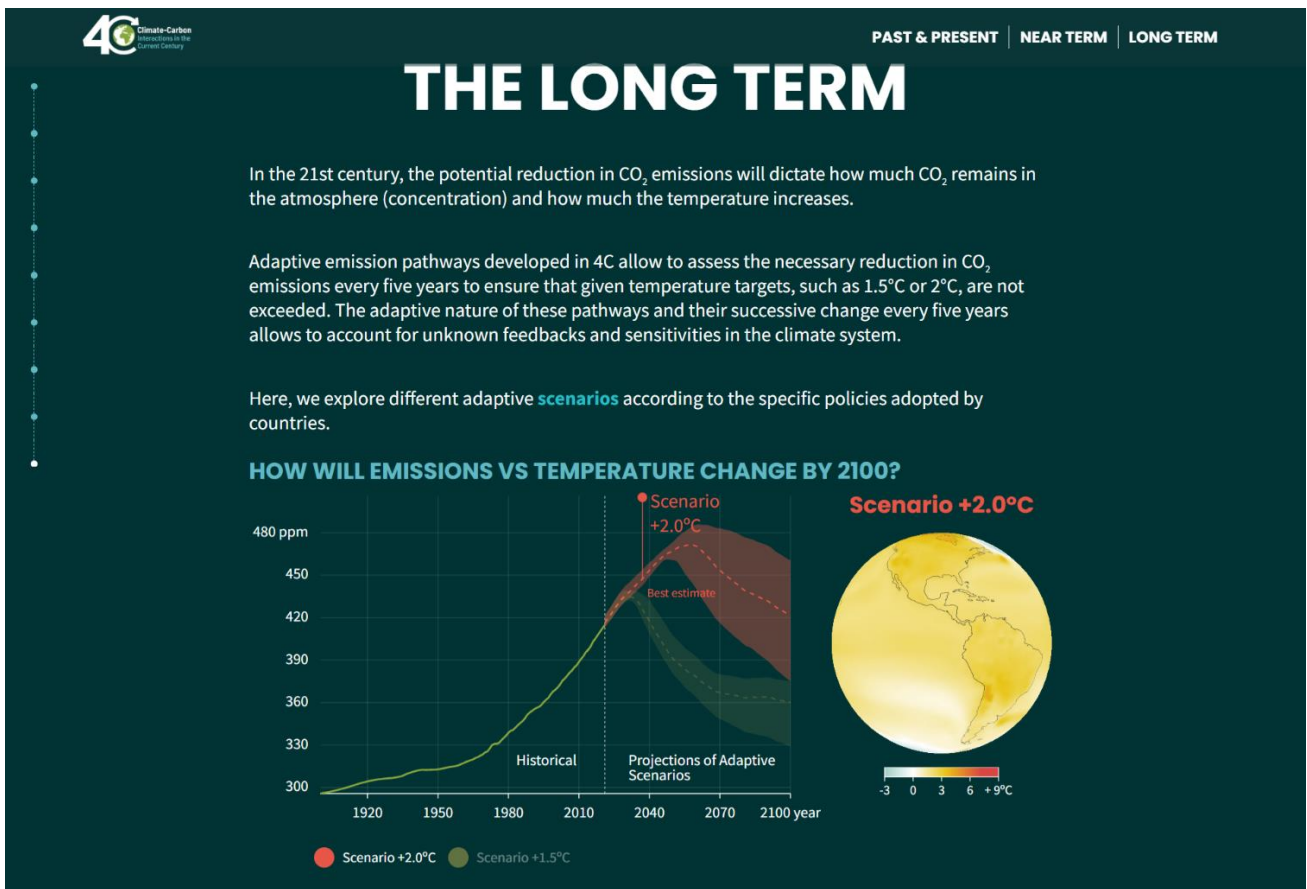- How will emissions vs temperature change by 2100?

Figure 4. Visualisation included in the Long Term section.

Finally, a concluding statement is shown, pointing to the urgency of cutting emissions. The users are also redirected to the 4C website through a link at the bottom of the webpage.
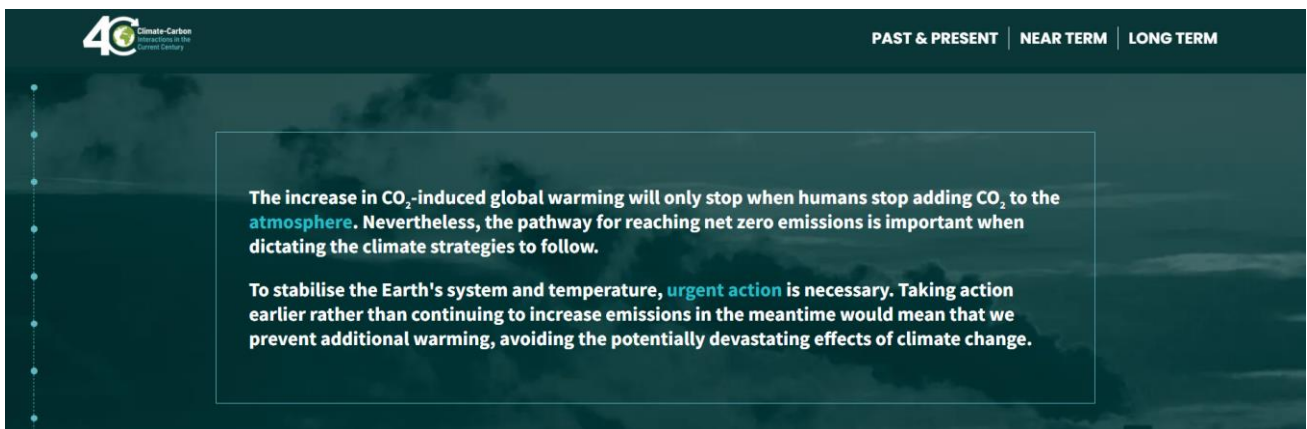
Figure 5. Concluding statement of explorable webpage.

5. Launch

The explorable explanation webpage has been available through a link on the project website since late spring 2023, while an official launch campaign is expected in September 2023, after minor updates are completed*. The launch will involve an article on the project website, posts on social media (Twitter) and dissemination to relevant contacts.*
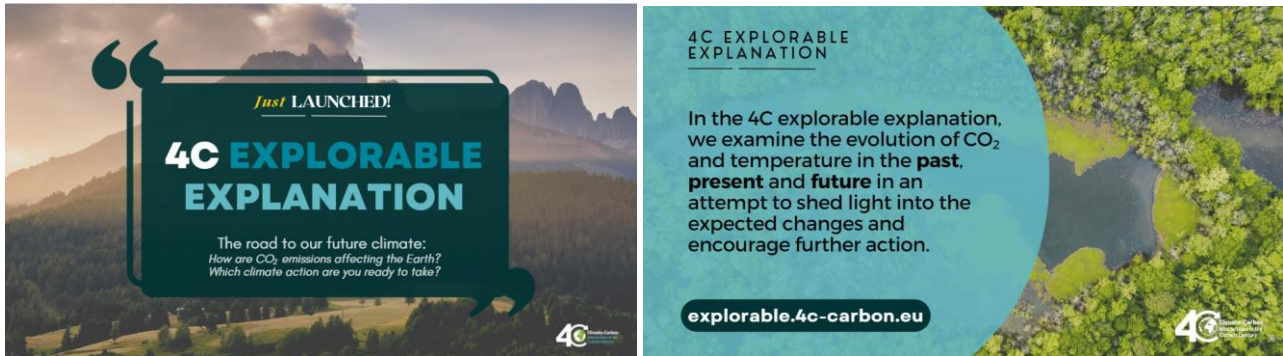

Figure 6. Visuals prepared for social media.

Acknowledgements