



Your CO₂- Calculator

Pedagogical material to
complement the CO₂
Calculator: project ideas and
work suggestions

Foreword – Däin CO₂-Rechner

Today, climate change is no longer questioned by science, but how can global warming be stopped and, if necessary, reversed? It is a complex problem, although the goal is supposedly simple: reducing the CO₂ footprint.

All living things release carbon dioxide into the atmosphere. Plants need it to live. Everyday activities, from surfing the internet to a burger to a cup of coffee, similarly release greenhouse gases. However, these gases can store a lot more heat than the atmosphere normally does. The result is a greenhouse effect where the planet's temperature rises. This increase in the global temperature can lead to ecosystems failing, species dying out, and an increase in extreme weather events in the form of storms, floods and droughts.

However, the less CO₂ and other greenhouse gases that are released into the atmosphere, the easier it will be for the climate to stabilise itself. Thus it is possible to aspire to CO₂ neutrality and to avert climate change.

The stimuli and ideas for project work in lessons presented below are intended to enable learners to inform themselves about this subject, to research facts and to form an opinion about the extent to which they are affected and which actions are appropriate, in their opinion.

The booklet is intended as educational support material for the online tool.

The calculator was developed by the klimAktiv organisation and adapted to the Luxembourgish context in collaboration with the Nohaltegkeetsrot (High Council for Sustainable Development). Calculating a personal CO₂ footprint is based on questions which are answered in the following categories: lifestyle, travel, living and electricity. There are exercises in the booklet for each of the categories, which can be used to gain a deeper understanding of the subjects.

Däin CO₂-Rechner:

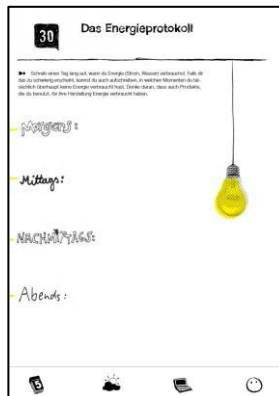


II. Energy and climate change

II.1. Daily energy consumption

Keeping a record, research, debate

The students investigate their own energy and electricity consumption: for this, they can use Page 30 in the [Logbuch Politik](#) as a template, for example.



Possible additional research:

(the results should be recorded as keywords, e.g. as a mind map):

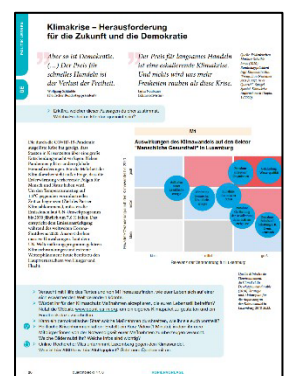
- How much energy is used when you do an internet search or send a text, or post a photo or a video online? How much water is needed to cool the servers?
- What is the energy consumption like for gaming and streaming?
- Where does Luxembourg get its electricity from? Where is it produced, and how is it sourced?
- Which are the forms of energy producing the most CO₂ emissions?
- What concerns (political, moral, environmental, etc.) exist in relation to the individual sources of electricity?

Closing debate:

The class is divided into two (or four) debating teams. The teams each look for arguments for or against the subject given below. They have around 20 minutes for this. After researching, they then swap arguments. Each team member must present at least one argument. Which team was the most convincing?

- *What are the advantages and disadvantages of digitalisation in all areas of life (school, work, leisure) with regard to a sustainable future?*

TIP: Worksheet “Klimakrise – Herausforderung für die Zukunft und die Demokratie” [“Climate crisis – a challenge for the future and democracy”] in: [duerchbléck 8: Zukunft elo!?](#), p. 26/50. You can find a graphic here with project stimuli and information.



II.2. Controversial climate debate

Discussion

The students read the following statements about climate change, which also illustrate the policy discussions. They are asked to respond to them: which statements do they have sympathy with? Which not? What do they think about the respective statement? Why?

After this, the statements should be analysed in detail for their content, and discussed:

- Comparison between statements by Greta Thunberg and Donald Trump: What emotions are they looking to stir up in their audience? Are there facts or scientific findings that support one of the statements? Which?
- Comparison between statements by Wolfgang Schäuble and Luisa Neubauer. What criticism of politics is being discussed here? How are the two arguing?

I want you to panic. I want you to feel the fear I feel every day. [...] I want you to act as if our house is on fire. Because it is.

Greta Thunberg (Swedish climate activist)

At the World Economic Forum, Davos, 25 January 2019

Der Preis für langsames Handeln ist eine eskalierende Klimakrise. Und nichts wird uns mehr Freiheiten rauben als diese Krise. [The price of acting slowly is an escalating climate crisis. And nothing will rob us of more freedoms than this crisis.]

Luisa Neubauer (German climate activist)

Source: Feldenkirchen Markus/Schaible Jonas (2020). Bundestagspräsident trifft Klimaaktivistin. "Wenn Frau Neubauer jetzt Ja sagt, ist es Quatsch". Spiegel Spezial. Klimakrise. Aufbruch nach Utopia, 1 (2020).

Aber so ist Demokratie. (...) Der Preis für schnelles Handeln ist der Verlust der Freiheit. [But that's how democracy is. (...) The price of acting quickly is the loss of freedom.]

Wolfgang Schäuble (President of the German Bundestag) Source: Feldenkirchen Markus/ Schaible Jonas (2020). Bundestagspräsident trifft Klimaaktivistin: "Wenn Frau Neubauer jetzt Ja sagt, ist es Quatsch". Spiegel Spezial. Klimakrise. Aufbruch nach Utopia, 1 (2020).

The POLAR ICE CAPS are at an all time high, the POLAR BEAR population has never been stronger. Where the hell is global warming?

Donald Trump (former US President)

Source: Twitter, 29 October 2014

II.3. Let's talk about ... *climate change*, *climate crisis*, *climate catastrophe*?

Research, analysis, discussion

The various viewpoints concerning a changing climate are similarly reflected in the choice of words used. To introduce the subject, the teacher writes the three terms on three A2 sheets of paper and asks the students what effect the words have on them. What thoughts do these terms trigger?

The students write the words they associate with these terms on the respective sheet. Does anything change in our perception depending on which word is used as the second element in this composite term?

In more extended research, students can find out which forms of words (climate change/catastrophe/crisis, global warming, etc.) are used by political parties or civil society organisations in Luxembourg. Using a table, they can record the various opinions of Luxembourg political parties on the subject of "climate". The following questions could be discussed:

- What effect do these terms have? Why are they used differently and used in debate?
- Are these positions appropriate or not, in your opinion?
- What subjects are priorities for you when you vote (or if you could vote)?
- What role does the subject area of climate and environment play?

II.4. Can nuclear technology save the climate?

Discussion and research

The teacher puts up the two quotations printed below via the projector, and discusses them with the students.

- What is the content of these statements?
- What reasons could people have for saying these things?
- Which people are more trustworthy? Why?

Through research, the students can engage with the subject and gather facts and figures. One part of the class gathers arguments in favour of nuclear energy, another the arguments against. After this, the arguments and facts are presented.

VI. Imprint

Publisher

Nohaltegkeetsrot / Conseil supérieur pour un développement durable

Zentrum fir politesch Bildung
Fondation d'utilité publique, RCSL G236

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Links checked: 02.09.2024

ISBN: 978-2-919788-00-2

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