

SALT.

CLAY.

ROCK.

on nuclear pasts and radiant futures

INTRODUCTION

SALT. CLAY. ROCK. received partial funding through the Zero Fund program of the German Federal Cultural Foundation. By accepting the grant, we agreed to take part in the foundation's initiative to explore climate-neutral cultural production, along with practices of environmental sustainability and climate-friendly alternatives within the cultural sector.

As a condition of the grant, both nGbK as an institution and our project are required to research and work toward climate-neutral production. We have done so with the support of Elie Peuvrel, nGbK's newly appointed climate officer. Each year, a CO₂ balance is calculated for our project and reviewed by Arqum, an independent auditing firm commissioned by the German Federal Cultural Foundation. We are permitted to offset up to 1 percent of the total funding amount. In our case, this allows us to purchase certificates to compensate for between 40 and 100 tons of CO₂ (or its equivalent in other greenhouse gases).

With the application-based "Zero Fund," the Federal Cultural Foundation helps cultural institutions develop climate neutral production forms, explore new aesthetics with as minimal an impact on the climate as possible. By promoting the development and implementation of artistically innovative and climate neutral art and cultural projects in 2023–2024, the Foundation hopes to sensitize cultural institutions and artists to the possibilities of environmentally sustainable production methods, and so doing, advance measures which actively protect our climate. The aim is to develop a model that encourages the German cultural sector to reduce greenhouse gasses in the long term.

([Zero Fund webpage](#))

As part of the funding requirements, we—the SALT. CLAY. ROCK. working group—also committed to preparing a guideline for climate-neutral production, based on our experiences, at the end of the project. The following is a collection of our thoughts and reflections gathered along the way. We felt that writing a straightforward guideline would neither reflect our actual approach nor be particularly useful for readers. Understanding how to carry out carbon accounting involves engaging with a set of concepts and strategies that did not seem to us to be as straightforward as guideline. Thus, what follows are a series of discussions on climate neutrality, along with thoughts and questions inspired by the climate-neutral production process. To this, we have then added a logbook documenting our efforts to realize a two-year, transnational curatorial and artistic research project, which included site-based productions in rural areas of Hungary and Germany and a final exhibition in Berlin.

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CO₂ LOGBOOK

CHALLENGES

- Organizing a climate-neutral production and protocol
- Doing situated research and art production in rural areas with minimal climate-neutral infrastructure, and navigating unfamiliar climate neutral infrastructure
- Learning by doing
- Curating and events programming without long-distance flights
- Working on a short deadline in carbon-neutral way
- Working with a host institution that has no climate-neutral protocols

DISCUSSION

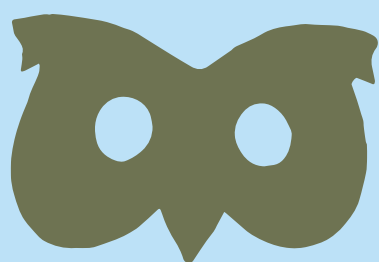
- What does producing a climate-neutral event look like?
- Will our curatorial and scenographic choices be affected by our climate -neutral mandate?
- Everything digital is carbon neutral?
- How can all this work actually be sustained? How do you account for unaccounted personal, social, and economic sustainability within a climate-neutral endeavor?

ACCOUNTING ISSUES

- What is not accounted for in the project?
- Does carbon counting unfairly penalize free culture?
- Accounting for the impact of culturally transformative actions that may not be climate neutral?

LOGBOOK

COLOPHON



CHALLENGES

Conducting a multiyear, transnational curatorial and artistic research project with an aim to maintain climate neutrality, we encountered a variety of practical and conceptual challenges, which we discuss below.

We anticipated that mobility and the transnational nature of the project would be a challenge, and thus dreamt of a slower pace of production and research. We were eager to see how the participating artists might respond aesthetically to the CO₂ challenge—in terms of formats, media, and materials—and how climate neutrality might conceptually intersect with our focus on (nuclear) energy futures.

We suspected that there would be many purely administrative aspects to this part of the project, yet were nevertheless unprepared for the practical concerns and conceptual twists that arose during both the production and the accounting processes.

We provide below a more in-depth discussion of the challenges we faced in attempting to realize such a complex project in a climate-neutral way, and of the conceptual concerns we encountered with accounting methodologies.



ORGANIZING A CLIMATE-NEUTRAL PRODUCTION AND PROTOCOL

With the Zero Fund grant, nGbK was able to employ Elie Peuvrel as the climate officer for our project and for the institution as a whole. In addition to supporting our team, he worked with nGbK to calculate the organization's carbon footprint and make green improvements. Elie attended most of the KSB's [Zero Academy](#) sessions and quickly got up to speed on how to fulfill the climate requirements, allowing us to concentrate on our research and curatorial questions.

Within *SALT. CLAY. ROCK.*, we created working groups for "communications" and "production," as well as a dedicated "climate working group," ensuring that Elie had consistent curatorial partners to dialog with.

To produce our exhibition, we first established climate goals, followed by climate-neutral working protocols, both with Elie and internally. These then had to be communicated to our artists and producers, Dina Darabos and Karoline Kerkai, to ensure the goals were met.

Climate-neutral production mostly involved identifying the most climate-neutral options available for travel, accommodation, art transport, and materials. Elie supported us in researching these options, educated us on the requirements and potential pitfalls of CO₂ accounting, and kept us informed about how nGbK's overall carbon accounting impacted our project-specific CO₂ goals—offering insights that could, in turn, shape curatorial and artistic decisions.

DOING SITUATED RESEARCH AND ART PRODUCTION IN RURAL AREAS WITH MINIMAL CLIMATE-NEUTRAL INFRASTRUCTURE, AND NAVIGATING UNFAMILIAR CLIMATE NEUTRAL INFRASTRUCTURE

SALT. CLAY. ROCK. had a difficult task: we were interested in doing research in unfamiliar rural areas without rail service, using e-cars to get there in order to meet our climate-neutral production goals.

Between Berlin and Budapest we could easily travel by train, but many of the sites where we were working had very infrequent or nonexistent train service. We had to rely on other means of transport.

In rural Hungary:

During our research period, there was very little e-car infrastructure outside of the [Budapest region](#).

The fact that Hungary's government was pushing the [controversial plan to make the country an e-car battery manufacturing hub](#) had, at the time of this writing, only just begun to trigger deeper investments in e-car infrastructure. For our research trip and subsequent visits to Hungary's rural areas, it was clear that the best we could do was to rent hybrid cars in combination with rail travel in order to reach our research sites. The only e-car charging station we encountered during our trip was, ironically, in front of the Paks nuclear power plant.

In Germany:

We were not lucky with our travel adventures in rural Germany. At the beginning of our e-car trip through Brandenburg, Saxony-Anhalt, and Lower Saxony, we were excited by the opportunity to travel with an electric car. None of us had ever used one before, and we had the forethought to check that there were charging stations along the way. We looked at the map and saw that there were chargers along the way and figured that was that.

Our first problem was that we had no real sense of the car's range, and had to find a charging station much sooner than we had anticipated. At the Wolfsburg charging station where we ended up, we thought we'd be fine charging the car while we ate dinner. It was a surprise stop in the city known for producing Volkswagens, and it was difficult to find a restaurant that was open. After finally enjoying an unexpected Italian dinner in the town square, we returned to the charging station to find that the car was far from being fully charged. In order to stay on schedule, we decided to press on.

By now, it must be a mundane complaint among those in the know that to rent an e-car, you really need to understand the charging infrastructure you'll be relying on throughout your trip. We had to learn on the fly that many charging stations are slow and intended to charge a car overnight. We found some stations—for example, one behind a corporate burger joint outside Morsleben—that could recharge the car more quickly. Imagine what our meal was like, and how climate-neutral it and its packaging really were ...

One time, our battery was almost empty and we were quite worried. We were relieved to find a charging station at one of our destinations—an information center of the BGE next to the Asse Repository. Unfortunately, only employees, not visitors, were allowed to use it. At our next stop, we arrived almost two hours late because we had to recharge along the way.

The combination of navigating unfamiliar terrain in a new-technology vehicle was overwhelming for us. Because of these problems, we were constantly

arriving late to appointments, upsetting our hosts, or reaching our accommodations late in the evening and missing proper meals. It was fun to travel with all five of us in a car, but the rushing around and lack of satisfying food made us a bit cranky.

A June 2022 report stated that, due to [a lack of charging stations and infrastructure](#) needed to support its goal of 10.5 million e-vehicles, Germany will likely miss its 2030 e-car target—essential to shifting the country’s climate trajectory. We found the infrastructure to be adequate but patchy, which made for a stressful trip.

In the end, we learned by doing, and we wouldn’t make the same planning mistakes again. At present, e-car infrastructure is organized around regular commuters. We hope that, as the technology improves, travelers won’t need to make as many frequent stops and will be able to enjoy timely meals. As things stand, traveling in a relaxed manner by e-car takes too much time—time that precariously financed cultural workers often do not have.

LEARNING BY DOING

None of us were experts in climate-neutral production at this project’s beginning. We knew what global warming was and what greenhouse gases are. We knew their sources. But none of us knew how to account for any of this. The Zero Fund hosted a [climate academy](#) to help grantees understand what climate accounting practically entails. It was interesting to wrap our minds around the actualities of carbon counting and [carbon trading](#).

Our first lesson, which helped us grasp the process, was that we only account for the project’s expenses. We did not account for the team’s individual twenty-four hours of existence, not even on research trips. In one day, each of us might have to account for a train ride to and a subway ride within Berlin, the relative climate costs of a generic vegetarian lunch, and the hotel room’s climate footprint if we stayed overnight. But if we spent no project money directly, meaning handing in a bill for accountancy, we would have no project-relevant climate costs—even if we traveled, ate, and slept.

We learned climate accounting in action. But equally important to our process was our climate officer’s ongoing participation in the Zero Academy. Without his and the academy’s support, we wouldn’t have had the time to organize our ambitious binational research project on nuclear questions—none of us being experts in that field. Elie helped us figure out the basics,

e.g., how to calculate Deutsche Bahn’s climate footprint and determine our share of it based on the distance traveled.

When we began, it seemed like we might have to reinvent the wheel with every new expense. But we learned that there were services already available for climate-neutral production. *Look for green-certified hotels*, for example—the certification is there for a reason.

We learned by doing, by learning from skilled professionals, and by realizing that the green transition has already begun, and that services exist to meet our needs.

CURATING AND EVENTS PROGRAMMING WITHOUT LONG-DISTANCE FLIGHTS

Some of us in the *SALT. CLAY. ROCK.* collective saw the idea of not inviting artists and speakers who would need to fly as a culturally transformative decision. [There has been a debate for some time within the art and politics world about this topic](#). The argument against flying people across the water to attend a conference or exhibition is that a livable planet is more important than the desire to invite cultural celebrities to contribute to an event. The counterproposal—to develop regional voices to fill higher-profile slots—is transformative, because it suggests that not all well-funded events need to be programmed around the most famous names. Cultural gatherings can foster dialogue with people who may be less well-known, but whose regional connections and approaches have much to offer.

Our show did not have a strict “no-fly” rule; we simply found that there was enough local and regional knowledge and creative talent that we didn’t need to book any flights.

Practically speaking, for our 2023 research assembly, we did have one contribution—a lecture by UK academic Eglė Rindzevičiūtė—delivered via Zoom. Besides her, there was no one we even considered flying in. In general, we agreed that we didn’t want our research assembly dominated by online talks; we all valued in-person presentations for their intangible qualities and for the opportunity they offered for less formal conversations after the talks.

WORKING ON A SHORT DEADLINE IN CARBON-NEUTRAL WAY

It can be challenging to produce in climate-neutral ways under tight deadlines. Getting the right offer takes time.

To give an example: toward the end of our project, we decided to print our exhibition guidebook rather than just have it online. We had a tight deadline but found a relatively climate-neutral method—risograph printing—for the job. However, we learned that the risograph printer would need more time to produce the work than we had, so we decided we needed to print elsewhere, regardless of the climate costs. We ended up going with a trusted offset printer in Leipzig, in order to have the booklet ready for the opening. Although the printer is not officially green-certified, when we called them, it turned out they could provide recycled paper and were using sustainable technology with mineral-free ink. We were lucky to find a printer who could deliver quickly, at a good price, and in a sustainable manner—which is not an easy task, as sustainable printers often have long wait times due to high demand.

Between the time needed to research the always-not-straightforward climate footprint of potential producers, and the time green production methods sometimes require, it's not always possible to produce in a carbon-neutral way on a short deadline.

WORKING ON A SHORT DEADLINE IN CARBON-NEUTRAL WAY

SALT. CLAY. ROCK. was lucky to work with nGbK as a host for our climate-neutral curatorial project. We initially wondered how much support we would receive for the climate neutrality of our project, but soon found that Annette Maechtel, nGbK's managing director, was fully on board. She suggested hiring Elie Peuvrel—who was already working at the organization—to serve as both their and our climate officer. For nGbK and for us, he would act as the interface with the Zero Fund and bring us up to speed on climate-neutral production. As an nGbK employee, he was already familiar with the staff, and Annette provided him with top-down support. So we found that when we discussed our climate-neutral needs with anyone at nGbK, they understood and were familiar with many of the methods and frameworks we employed to achieve our goals. Although nGbK had no established climate-neutral protocol, one was actively being developed in parallel with our project.

WHAT DOES PRODUCING A CLIMATE-NEUTRAL EVENT LOOK LIKE?

Here you can find two examples of events we produced, and the considerations taken to realize them in a climate-neutral way.

To achieve climate neutrality for our research assembly at nGbK in Berlin in November 2023, we took the following measures:

- **Travel:**
We invited guests who could travel to the assembly by train or public transport, prioritizing participants from Berlin and surrounding areas.
- **Accommodation:**
We arranged accommodations at a certified climate-neutral hotel and encouraged guests to stay with friends when possible.
- **Catering:**
We sourced organic products for catering and collaborated with [Pepe Dayaw \(Nowhere Kitchen\)](#) to provide lunch through his performative cooking practice, which utilizes leftovers. (fig. 1)
- **Research display:**
For the curatorial research display, we used existing materials. We sourced items from the previous nGbK exhibition, from storage resources, and from materials we borrowed from other Berlin institutions. (fig. 2)
- **Reusable design elements:**
Our graphic designer created textile objects inspired by her research on nuclear symbology. These pieces were designed to be reused as scenographic elements for future events during the project. (fig. 3)

And in Hungary:

In the summer of 2024, [Csilla Nagy](#) & [Rita Süveges](#) coorganized a gathering, conversation, and clay firing, entitled [Overcoming Time Artist-led Field Trip and Community Pit-Firing](#), in the rural town of Boda in Hungary. The event was hosted in a field dominated by signs on local geology, mining, and radioactive storage, next to the small town's park. In addition to the ceramic firing, it featured a conversation with local and regional figures, including a former uranium miner, the village's mayor, an environmental activist, and an expert from the research institute investigating the long-term safety of the nuclear repository envisioned in Boda.

From a climate-neutral perspective, what were the things we had to consider when organizing this event?

First of all, the materials. Whether purchased or found, clay is considered a renewable resource; greenhouse gases are only released if the clay is excavated using heavy machinery—this was not the case here. After considering the use of on-site clay, the artists decided to purchase clay instead, in order to ensure the sculptures would turn out fine. (fig. 4)

We were able to travel to the town with a hybrid car, and from Berlin by train, which lessened our travel footprint. However, many of the event attendees—as well as the videographer and the sculptures—arrived by car. In the end as their trajectories could not be reconstructed, we had not to account for their travel. (fig. 5)

In addition to the clay, the wood used to firing it needs to be considered. We have received locally-harvested wood from the mayor, a sustainable resource and as present had zero impact on our climate-budget. (fig. 6)

We were feeding our guests, which also gave us the opportunity to consider the climate footprint of the food we served. The food was prepared by women from the village. (fig. 7)

Here is the end result of the clay firing (fig. 8): ceramic blocks modeled after nuclear fuel rod cases.

WILL OUR CURATORIAL AND SCENOGRAPHIC CHOICES BE AFFECTED BY OUR CLIMATE-NEUTRAL MANDATE?

We had already developed the concept, formats, and planned artistic collaborations for *SALT. CLAY. ROCK.*, and secured part of the funding before learning about the Zero Fund. Our curatorial interest was sparked by how climate-neutral production and nuclear energy intersect—particularly in the controversial positioning of nuclear power as a potential solution to the climate crisis. This theme seemed timely and worthwhile to explore, and the practical challenge of producing in a climate-neutral way aligned naturally with our focus on energy futures. As part of our exploration related to the climate-neutral mandate, we addressed the question of energy futures and the challenges of the “green transition”. We explored this through a research assembly that included conversations with experts from both social and artistic fields. For example, we hosted a roundtable discussion with a climate activist and antinuclear activists from Germany and Hungary, examining the continuities of environmental struggles. On the practical side, when curating our public program, we prioritized geographical

proximity in selecting guests. Rather than being a constraint, this criterion proved to be an effective and natural guideline.

Our curatorial strategy of researching and developing new artistic works in rural locations in Germany and Hungary, however, posed an obvious challenge to climate neutrality. On-site research and participative production necessitated recurring visits to each location. While we made the effort to choose climate-neutral travel options and encouraged artists to consider this aspect in making their work, we prioritized providing artists with the opportunity to deeply engage with these contexts. In this respect, the climate mandate did not alter our curatorial strategy; it simply influenced how we executed it.

While the climate-neutral mandate structured how we planned and conducted research, the exhibition itself was about presenting the results of our two-year project in the best possible way. The climate-neutral mandate inspired us to use climate-neutral or reusable materials, and we implemented many of the solutions proposed by our climate officer. However, we were equally committed to supporting our artists in achieving the desired aesthetic impact of their work. We deliberately avoided creating an exhibition design that would appear “raw and unfinished,” a style sometimes associated with green design, as the central theme and thus the look of our project should be more associated with the high-tech spaces we explored. Instead, we embraced the industrial character of the exhibition space, making subtle interventions and utilizing sustainable, reusable materials. We made a compromise between aesthetic and ecological considerations: by combining ecological products like the strawplate walls, which have a biogenic carbon footprint of -40kg/m² (each square meter of this product removes 40 kilograms of CO₂ from the atmosphere) with the non-ecofriendly galvanized steel struts and studs. While the steel walls were not carbon neutral, they were reusable over the long-term, unlike the wood alternative. In the end, our exhibition design was still carbon neutral.

The climate-neutral mandate also influenced the reconstruction of nGbK’s new space at Alexanderplatz. When you enter the exhibition space, the visible gallery walls might look ordinary, but they are made of compressed straw panels rather than traditional plasterboard. These panels, purchased using part of the Zero Fund grant, will outlast the *SALT. CLAY. ROCK.* exhibition. Made from agricultural waste, the panels replace nonrenewable resources in the construction chain, reducing the overall climate footprint of the building. Yet these walls don’t look “green” or “eco”—they look like walls.



fig. 1



fig. 2



fig. 3



fig. 4



fig. 5



fig. 6



fig. 7



fig. 8

EVERYTHING DIGITAL IS CARBON NEUTRAL?

Throughout our research and production process, we kept on coming to an odd conclusion about carbon-neutral production. It seemed that the most climate-neutral way to do anything was to do it virtually, in the digital realm.

While committed to the goal of reducing our carbon emissions for good reasons, we found these suggestions to be socially counterproductive. And that the digital realm is not carbon neutral.

Nevertheless, we were told:

- Rather than meet in person, it was more climate-friendly to meet online.
- Rather than print a catalog or exhibition guide, we should make an online publication.
- Rather than invite speakers and guests to attend our research assembly, it would be better to hold it online.
- Rather than have an exhibition in the physical space of nGbK, we could present a virtual one.

The [Sunlight Doesn't Need a Pipeline](#) project is an artist-led investigation into carbon-neutral arts production in the United Kingdom. Their first finding is "[All pathways towards decarbonisation must first begin to reckon with the climate emergency's roots in racial capitalism \(Bhattacharyya, 2018\). For centuries, colonialism and imperial industrialisation has undervalued, extracted and commodified planet earth and its inhabitants, creating disparity and inequity worldwide.](#)"

Fully digitalizing the culture sector is a way to preserve the status quo. We like live events because they foster a public life that is open to chance and possibility. A fully digital program is one where institutional choice erases chance.

There is a value to online events and purely digital printing. But overall, the digital sector is a driver of the same racialized capitalism that emerges from colonialism and the imperial industrialization which caused the climate nightmare we are in.

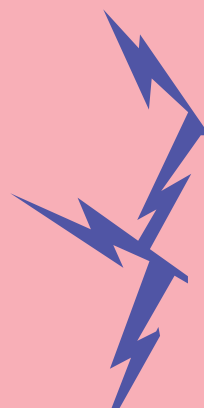
The counterintuitive logic of climate neutral digitalization is that (to give one example) [online conferences have less climate impact than a conference attended by train](#) because the climate math of an hour online is cheaper than an hour's train ride. Though a train seems far more climate neutral than a digital network, inherent economies of scale make train travel more negative on the climate than online presence. What remains unaccounted for, however, are the scale of servers, cables, and power plants: this view only considers the tiny percentage of energy cost you use while being online. The same applies to train travel, but

due to economies of scale, you "own" a larger share of carbon emissions when using the train.

["While technology-based solutions advance climate progress, they also generate 1.4 to 4 percent of global emissions."](#) Concurrent with this kind of accounting, big tech's carbon impact is calculated by counting the impact of their production and maintenance costs, rather than the energy infrastructure their products and services rely on. Big tech relies on electricity, but it is not in the "energy sector"; power plants are. Proponents of digitalization argue that the more we digitize, the greener we become, based on the digital's "smart management" capacities. Recent estimates from the World Economic Forum suggest that [digital technologies could deliver up to one-fifth of all the reductions](#) needed to achieve the 2050 net-zero goals in energy, materials, and mobility.

The [World Economic Forum](#) lauds digitality at length: "Digitalization can offer a range of fixes. For example, covering even the biggest wind farms with a single private wireless network can unlock solutions including predictive maintenance, repair analysis drones and augmented reality engineering. As a result, engineers make fewer trips out to sea and more turbines can be kept at peak output."

In the world of wind-farm management, it is possible to financially account for most services. But when people meet, strange and wonderful things happen. When people see art not screens, they see and feel more than what can be accounted for. They talk and plan. One effect of critical art and live culture emerges from its radically transformative goal of creating new and just systems. While impossible to account for, history shows us that this goal is not served by the management ideals of the controlled spaces that digitization provides.



HOW CAN ALL THIS WORK ACTUALLY BE SUSTAINED? HOW DO YOU ACCOUNT FOR UNACCOUNTED PERSONAL, SOCIAL, AND ECONOMIC SUSTAINABILITY WITHIN A CLIMATE-NEUTRAL ENDEAVOR?

Sustainability studies highlight that to ensure long-term coexistence on the Earth, we must go beyond addressing environmental sustainability alone and begin to account for economic, social, and cultural dimensions. While achieving climate neutrality is undoubtedly the most urgent prerequisite for any sustainable coexistence on a planet heading toward climate catastrophe, it addresses only one specific ecological aspect. In our project, we often encountered the challenge of balancing climate neutrality with other dimensions of sustainability, and trade-offs proved inevitable.

A [2021 study by Julie's Bicycle](#) estimates the visual arts' annual carbon footprint at approximately 70 million tons of emissions—less than 0.2 percent of global emissions. These emissions primarily stem from visitor traffic, building energy use, and art shipments. Public art institutions contribute around 11 percent of this total, with large institutions leading the way due to their international exhibitions, jet-setting lifestyles, and significant visitor traffic. This illustrates the scale and the context we entered with *SALT. CLAY. ROCK.*, a transnational yet predominantly regional project focused on the German–Hungarian axis. Compared to its 2.5-year timeframe, the project operated on a relatively modest budget.

Thematically centered on energy futures and deep-time, through the lens of nuclear research, we initially embraced the challenge of realizing the two-year research and exhibition project in a climate-neutral way. However, it soon became evident that climate-neutral production required extensive research and learning. It was a complex and often infeasible endeavor. On one hand, exploring and implementing climate-neutral solutions significantly increased our already underpaid workload and related stress. And on the other, the moderate budget frequently ruled out the possibility of opting for expensive climate-neutral alternatives without compromising the project's content or focus. Recognizing these difficulties, we invited the working group members to reflect on their experiences and working conditions by answering the following questions:

1. During the *SALT. CLAY. ROCK.* project (fall 2022–end of 2024), how many hours per week did you work on average (both within and outside of the project)?
2. If you calculate your hourly wage by dividing your income by these hours, what would it be?
3. Did you take any holidays when you were entirely free

from work? If so, how long?

4. Overall, how would you assess your personal and economic sustainability during this period?

5. Were there instances where you had to compromise climate neutrality for personal or economic sustainability or to maintain the project's conceptual focus? Please provide one or two examples.

The average weekly workload of the group members ranged between eight and fifteen hours. As one curatorial team member noted, calculating the hourly wage “would only make one very sad”; indeed, the wage would be around half of the minimum wage in Germany. For all participants, *SALT. CLAY. ROCK.* was a side project alongside various freelance engagements or part- or full-time employment. Two members also balanced care responsibilities for young children. Characteristically, all participants were overworked, often working around the clock, and experienced phases of exhaustion. Those employed by institutions enjoyed greater financial stability compared to freelance curators. Taking real holidays proved challenging for everyone. Many participants attended online meetings and responded to emails even during our supposed breaks, or had to help out during holiday due to an emergency. The team collectively paused the project between December 20, 2023, and February 12, 2024, but most members still evaluated their personal sustainability during the project as poor. Work-related stress frequently affected physical and psychological health, personal relationships, and overall well-being. These strains also impacted the group's social cohesion, stemming from the inequitable division of underpaid labor among members with diverse backgrounds, life situations, and skill sets. Additional pressures arose from illnesses and competing work obligations. (fig. 9-10)

In these conditions, the group occasionally prioritized other dimensions of sustainability over ecological ones. For instance, we used private cars for research trips to remote villages to save time and money. Similarly, during production, we sometimes opted for familiar materials and methods rather than investing additional effort in researching and testing climate-neutral alternatives. Despite these challenges, and even personal difficulties, we never seriously considered reducing the project's scope to ease our workload. On the contrary, our enthusiasm often led us to embrace new topics, ultimately increasing the number of commissions from seven to nine. We remained committed to producing professional, detail-oriented work while meeting curatorial obligations, yet neglected our own well-being—a persistent issue within the curatorial profession that deserves critical reflection and change.



fig. 9



fig. 10

Carbon accounting relies, first of all, on invoices. Therefore, everything that is not captured in monetary transactions falls out of view. Exceptions to this are related to movement: Visitor traffic, the travel of nGbK employees to workplaces, and transport of material from A to B, as this can be investigated and easily estimated on the basis of addresses on receipts.

- Many trips were unpaid: when someone brought us along in a private car during research trips; community mobility when larger groups volunteered to coorganize events; small trips forgotten, or trips we didn't financially account for—such as picking things up or moving around in Berlin during event preparations (by e-bike or car).
- Emissions from the production and disposal of the food we consumed during our research trips, meetings, community events, and residencies. We also surely did not account for the emissions from the food that fueled our work on this project.
- The energy used in our home offices and mobile workspaces, powering our devices (the working group mostly worked outside of nGbK).
- The emissions related to our online meetings (Zoom or Webex); an estimated 200 meetings over the course of the project would amount to around 100 kg of CO₂.
- Translations and text work using AI, all of our online research, Google searches, Google Maps, Google Drive, and so on.
- The CO₂ impact of the preexisting structures that were the focus of our project—power plants, repositories, mining—which we did not build but engaged with thematically.
- All the public transport tickets we lost...
- All the things we forgot ...
- All the things we did not document. If we had documented everything in the project, Elie would be able to reconstruct a much fuller picture.

DOES CARBON COUNTING UNFAIRLY PENALIZE FREE CULTURE?



Calculating [an institution's carbon footprint](#) is an important step in creating a carbon-neutral art institution. The footprint may also be called a [Greenhouse Gas Inventory \(GHG Inventory\)](#) or "house balance," which is the term we came to use. The house balance involves calculating how much greenhouse gasses in CO₂ equivalent (CO₂e) the institution, nGbK in *SALT. CLAY. ROCK.*'s case, generated. Like any other museum or gallery, nGbK needs to calculate the CO₂ and other greenhouse gasses are released over the normal operation of the institution. Heating, lighting,

and running computers all release greenhouse gasses. Formally speaking, the energy use, mobility, materials utilized, and wastestream are all a part of the EU [greenhouse gas protocol](#) that organizes methods for greenhouse gas accounting.

Our curatorial collective and nGbK management were surprised that we had to account for the climate impact of visitors' trips to the gallery. We knew that travel greatly contributes to greenhouse gasses, but our responsibility was calculated in a way we didn't predict. nGbK charges no entrance fee, so it doesn't directly profit from visitors. [nGbK was founded in 1969 by the city of Berlin as a directly democratic, open membership organization](#), committed to addressing societal power structures. nGbK is a part of the [free culture movement](#), a [third place](#), with an open, bottom-up culture informed by democratic and social ideals.

In pursuing its mission, (and unlike many [other organizations receiving Zero Fund grants](#),) nGbK does not charge an entrance fee. As a relatively small organization, we felt that nGbK and similar organizations were being inadvertently punished for their idealistic approach to culture. Our institution, recently relocated from Kreuzberg's popular Kotti-Kiez to a former McDonalds right across from the major Alexanderplatz transportation hub, has open doors. Anyone can walk in, whenever, and be counted as a visitor, even if they just want to use the nice new toilets.

How any visitor arrived at the door needed to be accounted for. If they were visiting the city and coming to the gallery, we'd have to account for the climate impact of the whole trip. It would be best if they came by foot, bike, or public transportation. Entrance-charging institutions have the opportunity to incentivize green travel to their front doors with offers made via their online and telephone ticket sales. But with no tickets to sell, nGbK does not have this opportunity. While there are [businesses that help large institutions](#) deal with the carbon footprints of their paying customers, we did not have these incentives, and we were left on the hook for our green and democratic ideals.

When we and the few other no-entry-fee organizations highlighted this problem to the KSB, they responded, still asking us to account for our visitor footprint, with an accounting method responsive to our cultural ethic. This involves visitor questionnaires to track information that can be translated into more precise carbon costs.

ACCOUNTING FOR THE IMPACT OF CULTURALLY TRANSFORMATIVE ACTIONS THAT MAY NOT BE CLIMATE NEUTRAL?

Cultural impact cannot be measured with the Zero Fund's accounting methods. This feels strange because so much contemporary artist and curatorial discourse is centered around questions of meaning and change. What does the artwork mean for the artist? What does it communicate to an audience? What research and references went into the work to make it meaningful? Contemporary art's free play with ideas is a license taken to communicate in ways intended to impact society. Much of art's supposed value is in what new ideas it contributes to society, often towards cultural renewal.

Over the last few decades, the genre of [social practice art](#) has put an even greater focus on an artist or curator's impact. Social practice is still concerned with meaning, but its methods differ from generic modern art by directly playing with social exchange and performative affect, often beyond the gallery. While generic contemporary art might suggest that a painting is meaningful within itself, social practice organizes the composition and reception of the artwork's aesthetic play as an element of the work. It communicates or translates concepts or experience to build meaningful relationships. The results may be more directly transformative. Social practice artwork also often draws from and contributes to protest aesthetics and protest movements.

As contemporary art or social practice, art can transform things which create speculative value. Art is valued because its meaning can be transformational. Artist and curator's careers are made of the political and social effect they creatively organize. So it's jarring to realize that climate neutral production has nothing to do with any of this.

Carbon neutral production may excite an [object-oriented ontologist](#), because at its core is a simple materialist question, "how much carbon was either released or captured in this expense?" Carbon neutral production does not register immaterial attitudes. It is focused on the greenhouse gases from financial transactions and production. If produced in a carbon-neutral way, an artwork communicating a desire to burn the world's oil and to bury all the forests in tar would be "greener" than a community discussion around how to establish a neighborhood carbon sink and organic farm if attendees came by car.

When accounting for greenhouse gas, throw away any attention to meaning, political or cultural development. It's not the topic here.

Below is a logbook of events, travels, decisions, and discussions we had around climate neutrality over the two years of our project. The entries are in chronological order, reflecting how the field of carbon accounting unfolded for us—step by step, through a process of learning by doing. We included all the travel associated with the project, as we quickly learned that personal mobility, which has an outsized carbon footprint in comparison to object transport, posed one of the greatest climate-neutrality challenges. Frequent travel to remote rural locations and between Germany and Hungary is conceptually inscribed to our project, and therefore particularly significant to our documentation. After our carbon accounting was finished, we were able to add the carbon emissions calculated to most program aspects and decisions included in this logbook. We hope this will help future climate-neutral projects use our concrete figures as a helpful point of reference.



November 9, 2022

During an online meeting, the working group of *SALT. CLAY. ROCK.* decided on how to distribute responsibilities for the next two years of the project. In addition to working groups on communication, production, finance and the research blog, a working group for climate neutrality was established to address this aspect of the project in collaboration with nGbK climate officer Elie Peuvrel.

FYI: At nGbK, curatorial working groups consist of at least five association members who come together to realize an exhibition project. These groups are self-organized and work closely with various departments at nGbK on the production, communication, and finances of their project.

February 8, 2023 (fig. 11)

The working group of *SALT. CLAY. ROCK.* begins their first curatorial research trip to Hungary. To cut down on emissions, we all arrived by train and traveled by public transport. The emissions for producing our food during the trip, paid from our per diems, is not accounted for.

Overall emissions from the research trip (travel and accommodation, five people): 633 kg CO₂e

February 9, 2023 (fig. 12)

We picked up our hybrid car in Paks to continue the research trip in remote villages and took a photo of the kilometer gauge at the start of the journey so we would be able to account for our emissions. Because of the nonexistent e-car infrastructure, we were not able to use an electric car, but we thought that having five people traveling together in a hybrid car was a good compromise. We spent 219 euros for the car rental, although we could have used a car with a combustion engine borrowed for free from a family member. In the carbon accountancy our efforts made no difference, the trip was calculated as if we traveled by a simple combustion engine car.

Emissions for the car trip: 66,9 kg CO₂e

Emissions for the same trip with e-car: 23,3 kg CO₂e

February 11, 2023 (fig. 13-14)

During our research trip in Magyaregregy, Dr. Lajos Bihari drove us out into the countryside in his old jeep to show us the location that, in the 1980s, had been slated as a possible nuclear repository site. Largely thanks to his resistance—and his personal connections as the village doctor—the plans were successfully halted. After the bumpy but exciting ride with six of us

in an old jeep, we were warmly invited to a brunch he organized for us. Since no financial transactions were involved, the related emissions do not appear in our CO₂ balance.

March 28, 2023 (fig. 15)

Last night we failed to charge our e-car, which made us late for a meeting at the Gorleben Archive, since we now had to take time to decipher the instructions for the station and correctly charge the car battery. In the end, we split up: some of us went into the meeting while others stayed behind to try and connect the car. Unfortunately, we still didn't manage to charge it, so one of us had to drive the car from our next meeting location—the Beluga Triangle—to the nearest e-car charging station, accompanied by one of our hosts in their combustion-engine car. We left our car there to charge, drove back to the meeting, and were later taken again to retrieve the car at the end of the session. This dynamic repeated itself, and our tightly planned schedule began shifting around the need to charge the car. In many cases, this meant one of us had to miss parts of the program to manage the charging or ended up spending the evening at the fueling station with a junk food dinner. This was one of two times we rented an electric car during our program. Another time (September 16, 2024), Julia from the working group and the artist Sonya Schönberger traveled from Leipzig and Berlin by train to Magdeburg, where they rented an e-car to visit the final repository in Morsleben. This trip went very smoothly—as no charging was needed during the 100 km journey—although the working group member was quite nervous beforehand due to previous experiences. An e-car has one third of the emissions of a combustion-engine vehicle.

Emissions from the curatorial research trip in Germany:
310 kg CO₂e

July 11, 2023 (fig. 16)

We held an online workshop on climate neutrality with climate officer Elie Peuvrel and the nGbK team. During the session, we evaluated the calculated emissions from our research trips to refine our climate-neutral strategy based on initial insights.

We learned that our two curatorial research trips generated approximately 1 ton of CO₂e—about 5 percent of the mobility emissions allowed for the project. However, we also learned from Elie, and indirectly from the Zero Academy, that our biggest challenge wouldn't be staying within our emissions threshold for the project's activities, but rather the emissions generated by public travel to our programs. While our upcoming artist-related travel was estimated to produce around 4 tons of CO₂e, visitor traffic to nGbK was projected to account for approximately

16 tons of CO₂e. This alone would nearly exhaust the emissions allowance for the entire project.

To address this issue, we agreed to initiate discussions with the Zero Funds program regarding these visitor-related emissions. We found this issue controversial, as visitor traffic seemed beyond our direct control and counterproductive to our goal of maximizing public engagement with the outcomes of our work. It was also difficult to measure accurately, given nGbK's location on Alexanderplatz—a major transportation hub where people often pass by during their daily routines.

The conversations with the Zero Funds did not lead to a complete shift in this regard, as addressing visitor traffic and raising public awareness around climate impacts are central objectives of the KSB Zero project. To better estimate visitor numbers and their associated emissions, nGbK prepared a mobility questionnaire for the exhibition. Based on this a coefficient was calculated, which was multiplied by the counted visitor numbers.

Emissions from visitor traffic in *SALT. CLAY. ROCK.*:
19,6 T CO₂e, 59,4% of all emissions in the project

August 1–4, 2023 (fig. 17)

In early August 2023, we took all our Hungarian-collaborating artists on a research trip to the locations we intended to work with during the project. We were four artists, two *SALT. CLAY. ROCK.* working group members, and our Hungarian producer. This trip was low in travel emissions, as one of the artists arrived by car from Bratislava for an unrelated performance that same weekend. Because of the mixed purpose of his travel, expenses were partly paid privately and partly from a per diem, meaning emissions were ultimately unaccounted for, yet he could take three people in his car. All other participants travelled by public transport, train where possible. One of the working group members was traveling to Hungary for holidays afterwards, and her family joined the trip with their private car, which was also privately paid. In this way, we were able to move in relative comfort and with flexibility between Paks, Bácskány, and Ófalu, using a mixture of car travel, public transport, and walking.

We took a long walk through the hills between Bácskány and Ófalu, giving in to the summer heat and a slower pace, cooling our feet in the Danube or a nearby lake.

Estimated emissions from this research trip:
350 kg CO₂e



fig. 11, fig. 12





fig. 13, fig. 14



<https://vimeo.com/1054572674>

fig. 15

ngbk

neue Gesellschaft für bildende Kunst
Oranienstraße 25 10999 Berlin
www.ngbk.de

Um Salt. Clay. Rock. als klimaneutrales Projekt zu realisieren, möchten wir Ihre An- und Abreise mit einbeziehen. Dank Ihrer Mobilitätsdaten können wir unseren CO₂-Fußabdruck genau berechnen und kompensieren. Vielen Dank für Ihre Beteiligung!

1. Wenn Sie auf Reisen sind, aus welcher Stadt/Region/Land kommen Sie?
2. Mit welchem Verkehrsmittel sind Sie nach Berlin gereist?
3. Wie lange bleiben Sie in Berlin?
4. Aus welchem Standort bzw. von welcher ÖPNV-Station kommen Sie gerade?

Alternativ: Wie lang war die Strecke ungefähr (in Kilometern)?

5. Welches Verkehrsmittel haben Sie benutzt, um hierher zu kommen?

(z.B. zu Fuß, S-Bahn, E-Roller)

Vielen Dank für Ihre Bereitschaft zur Teilnahme!

fig. 16



fig. 17

August 11–12, 2023

Two people, Vincent from the working group and artist Sonya Schönberger traveled by private car to Morsleben and Beendorf to introduce Sonya to the site we thought she might find interesting for her work.

Emissions from this research trip: 85,5 kg CO₂e

August 25–27, 2023

Four people—Vincent, Julia, and Katalin from the working group, along with artist Ana Alenso—traveled by private car to the Erzgebirge (Ore) Mountains for a research trip, including stops in Zinnwald, Johannegeorgenstadt, Schlema-Bad Aue, Chemnitz, and Dresden. Ana Alenso gave an artist talk in Zinnwald (for another project) on the evening of the 25th, which we all attended. In Chemnitz, we visited the PPKK installation, whom we later invited to the research assembly, and in Dresden, we attended the finissage of Zorka Wollny's exhibition, cocurated by Vincent. This trip was only possible because, by coincidence, most of us had other work in the area.

Emissions from this research trip: 239 kg CO₂e

September 9–10, 2023 (fig. 18)

A member of the curatorial team, Virág, took the artist Anna Witt on a research trip in Wendland. Based on our experiences from previous research trips, we traveled by private car, as the research locations were spread throughout the region. We forgot to photograph the car's odometer at the beginning of the trip, so the emissions had to be estimated using Google Maps. Through one of the activists, we found a place to stay for the night. We had brought a tent, planning to camp as a symbolic gesture to reduce our emissions—but since the house (a former yoga retreat) had been built with sustainable materials and was powered by ecoenergy, we decided to stay there and use the opportunity to experiment with how these emissions would be calculated. We were invited for dinner and breakfast with vegetables from the garden. In the end, it turned out that the emissions from all the overnight stays in the project, except those in a certified eco-hostel, were calculated using one single emission factor (12.220kg CO₂e), so where we stayed or what we ate made no difference in the overall climate balance.

We discussed how Anna might be able to continue her research in the area in a climate-neutral way, while still maintaining the flexibility she needed—but found no convincing solution. In the end, thanks to a scholarship and teaching position in Braunschweig, she was able to deepen and extend her research by involving

her students, independently of our project. As a result, much of her travel to Gorleben does not appear in our climate balance.

Estimated emissions for this trip: 130 kg CO₂e

November 17, 2023 (fig. 19)

Today we began our first public event, the Research Assembly. For our climate-neutral considerations, please see [What does producing a climate-neutral event look like?](#)

Estimated emissions from producing the research assembly (material): 868,3 kg CO₂e

Estimated emissions of mobility (all preceeding artist research trips, travel & accommodation for the research assembly) 1244,1 kg CO₂e

November 18, 2023 (fig. 20)

On the second day of our research assembly, inspired by our climate-neutral journey, we wove the question of energy futures and infrastructures into several aspects of our public program. We invited a climate activist for a roundtable discussion with antinuclear activists from Germany and Hungary to explore continuities in environmental struggles. We explored the question of energy futures and the challenges of the 'green transition' through a conversation with experts from both social and artistic fields. In an inspiring twist of events, just as Oxana Timofeeva was reflecting on the philosophical implications of the Dyson sphere and humanity's desire for endless energy, a power failure occurred. It damaged the building's electrical system and forced us to evacuate nGbK. An audience member, [Takashi Arai](#), generously offered their studio as an alternative venue for our final conversation, which focused on energy infrastructures and degrowth. This unexpected adventure sparked curiosity among our audience. We collectively relocated and formed a circle, sitting on the floor of the studio, for an engaging and lively exchange.

November 19, 2023 (fig. 21)

We used the opportunity of having all our collaborating artists present for the research assembly to introduce them to the concept of climate neutrality and begin a reflection on what this might mean for the production of their artworks. We gathered for what we called a climate-neutral brunch, during which our climate officer, Elie, gave a presentation on carbon accounting. We then discussed the artists' concrete plans and what climate neutrality could mean for their production processes.

[Link to presentation.](#)

November 22, 2023 (fig. 22)

This photograph depicts the transport of research material to our research assembly by private e-bike, resulting in an emission of about 300g of CO₂. These emissions do not appear in our balance, as there was no financial transaction behind them. The same is true for the beanbags we borrowed from Haus der Kulturen der Welt (HKW) for the event, or for some car rides undertaken by Berlin-based members of the project to pick up materials—these are difficult to reconstruct.

Transport costs included in our balance include:

- DHL shipments of research material from the Gorleben Archive
 - Travel of team members, invited artists, and guests, by train (no flights)
 - Travel within urban areas via public transport tickets
 - Transport of purchased materials
- Emissions from transport of materials to research assembly: 11 kg CO₂e

Emission from visitor traffic: 370 kg CO₂e

Emissions from travels to research assembly:

1244 kg CO₂e

February 21, 2024

Virág from the climate-neutral working group met today with Elie, the climate officer, to review the CO₂ calculations for 2023 and go through questions Elie had in order to finalize his calculations. During the meeting, we realized that since CO₂ accounting is based on project invoices—and not everything that causes emissions involves a monetary transaction—the resulting data is somewhat patchy. We also recognized that, in order to capture absolutely everything, we would have needed far more meticulous documentation, which seemed unfeasible given the project's complexity and resources. Trying to reconstruct emissions solely from invoices turned out to be quite the detective's task. Given the practical challenges of accounting for activities outside monetary transactions, we decided to adhere to the invoice-based approach for carbon accounting for this project.

March 8–9, 2024

Rita Süveges and Csilla Nagy traveled to Pécs from Budapest by train for a research trip.

Emissions from this trip: 37,42 kg CO₂e

March 22–23, 2024

Two people, artists Krisztina Erdei and Dániel Misota, traveled by public transport from

Budapest to the village of Bátaapáti in order to research, make contacts, and collect stories.

Emissions from this trip: 50,6 kg CO₂e

May 2–3, 2024

Artist Anna Witt returned to Wendland with a group of students from the University of Braunschweig. Ten people traveled by a rented van to the area, as it was paid by the university it does not appear in our climate accountancy.

May 10–13, 2024

Four people, artists Krisztina Erdei and Dániel Misota, András Cséfalvay and curatorial team-member Katalin Erdődi traveled by public transport from Budapest, Vienna and Bratislava to Bátaapáti. On May 11 the repository had an open day, where it was possible to join a tour to descend into the tunnel's 200m depth where its nuclear waste is stored. During this weekend András recorded sounds for his opera with the help of local students, while Kriszta and Dániel continued their research and shot the first scenes for their film.

Emissions from this trip: 248 kg CO₂e

May 16–17, 2024

Four people, Julia & Vincent from the working group and artist Ana Alenso with her camera person Augusto returned for a research trip to the Erzgebirge (Ore) Mountains, including visits to Johanngeorgenstadt and Bad Schlema/Aue by train and private car.

Emissions from this trip: 146,13 kg CO₂e

May 17–19, 2024

Artist Anna Witt returned to Wendland with her family for the "Kulturelle Landpartie" to find a partner institution. Three people traveled to the area using a rented car; as it was funded by her scholarship at the University of Braunschweig, it does not appear in our climate accounting.

May 27–28, 2024

Artist Sonya Schönberger and Julia from the working group returned to Morsleben/Beendorf. Sonya traveled from Berlin to Magdeburg by train, Julia from Leipzig. In Magdeburg they rented an e-car, walked from the train station to the e-car station approx. 1,5 km and traveled then to Morsleben/Beendorf and back, returning to Berlin/Dresden again by train.

They stayed in a guesthouse in separate rooms.
Emissions from this trip: 47,8 kg CO₂e

June 5, 2024

Today this was sent in an email to the producers who supported us throughout the project.

HOW TO DO CO₂ DOCUMENTATION OF A MOBILITY?

For group or individual travels a google sheet like this needs to be filled out by the organiser/traveler ([example for research trip in Hungary](#))

The invoices we account for should be cross referenced with our finance list.

Additionally, ideally, we document:

- car / e-car rides with photos of the km gauge before and after
- travels within cities with public transport tickets with google maps
- probably not necessary to do google maps of travels by train

See documentation example here (distance/km should be visible):
<https://cloud.freiheitswolke.org/s/3WieHAyD8czWZNf>

Finally, for the overnight stays this sheet needs to be filled out:
<https://cloud.freiheitswolke.org/s/toGzyD2AfFAKwER>

June 5–7, 2024

Rita Süveges and Csilla Nagy traveled to the Pécs and the Boda region to do further research and plan their artist-led field trip. They traveled by train.

Emissions from this trip: 61,82 kg CO₂e

July 4–7, 2024 (fig. 23–28)

Virág from the curatorial team joined the film-shooting week for the production of Krisztina Erdei and Dániel Misota's work. She also had a mandate from Elie, the climate officer, to observe and document everything for the purposes of later climate accounting. She arrived by train from Berlin and was picked up in Budapest by one of the participants who was transporting equipment, who drove her to Bábaapáti. The rest of the team also drove from Budapest to Bábaapáti with equipment and props in another private car. They stayed for three nights in an apartment with three rooms, a kitchen equipped with a gas oven, and one bathroom—all meticulously photographed for future CO₂ calculations. We all traveled back to Budapest together in one car. There wasn't much film equipment: the shoot was done with a mobile phone and natural light—all in all, a

minimalistic setup. As it was a participatory film shoot, several community members helped with transporting people and equipment, and a Trabant owner came from somewhere in the region for the filming. Kriszta's partner also joined the shoot to support the production; we all used his car. At lunch in the local restaurant, they told us about all the preparatory work that had gone into the project. Neither the lunch, nor the generous community support, nor the emissions related to this preparatory or unpaid work will appear in our CO₂ balance.

Emissions from this film shooting weekend:
283,5 kg CO₂e

July 14, 2024 (fig. 29)

We held our first public event in Hungary—an artist-led field trip with artists Rita Süveges and Csilla Nagy to the small village of Boda near Pécs. For our climate-neutral considerations, please see [What does producing a climate-neutral event look like?](#)

Emissions for the artwork and event production:
128,1 kg CO₂e

Estimated mobility emissions: 251,8 kg CO₂e

July 22, 2024

Artist Dominika Trapp traveled by public transport from Budapest to Paks to conduct her first interviews for the project.

Emissions from this trip: 7 kg CO₂e

August 12–15, 2024

Artist Anna Witt returned to Wendland with her family. Three people traveled to the area using a rented car; since the trip was funded by her scholarship at the University of Braunschweig, it does not appear in our climate accounting.

August 21, 2024

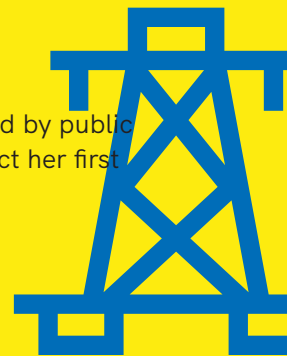
Two people—Vincent from the working group and artist Sonya Schönberger—traveled by public transport for a research trip to Peine, Germany.

Emissions from this trip: 21,8 kg CO₂e

August 24–25, 2024

Artists Krisztina Erdei and Dániel Misota returned to Bábaapáti for a film shoot weekend. They traveled by public transport using their annual train passes.

Emissions from this trip: 50,6 kg CO₂e



August 28–31, 2024

Rita Süveges and Csilla Nagy traveled to the Pécs and Boda region for research, using a combination of train and public bus.

Emissions from this trip: 114,7 kg CO₂e

September 1–3, 2024

Anna Witt takes a detour on her family holiday to the village of Ófalu in Hungary for research. As the trip was a mixture of work and holiday, related costs were not directly accounted in the project and thus the emissions from this trip are zero.

September 8, 2024

Artist-led field trip in Rheinsberg, Germany:

In preparation of her [event](#), artist Marike Schreiber mainly took bike trips to the area or went for test walks with her family, to, among other things, figure out the walking distance of her “family friendly trip.” Marike lives in a small village close to Stechlin lake, the Rheinsberg nuclear power plant and the Leibniz-Institut in Neuglobsow. She completed some research trips to Rheinberg and Menz with a private car, as the regional public transport system in the border region of Brandenburg and Mecklenburg-Vorpommern is a bit underdeveloped. These trips by car weren’t accounted for.

During her artist-led field trip, local fish and water were served. It was a Sunday, and we also served fresh bread that was brought from Berlin by our producer Karoline by train. As the trip started at Rheinsberg train station and ended at the Neuglobsow bus station, the audience and the *SALT. CLAY. ROCK.* team arrived by train. The group could travel between stations with the “Rufbus” (on-call bus) that serviced the area. Some people arrived by private car.

September 9, 19, 26, 30, 2024

In September, artist Dominika Trapp traveled four times by public bus from Budapest to Paks to conduct interviews for her artistic work.

Emissions from each day trip: 7 kg CO₂e

September 13–14, 2024

Artists Krisztina Erdei and Dániel Misota invited the people who participated in making their film to a dinner cooked over an open fire—a scene that is also featured in the film. They traveled via public transport using their annual passes and stayed for two nights. Emissions from this event:

Food (goulash with meat): 64,8 kg CO₂e

Travel and accommodation (2 persons, 2 nights): 50,6 kg CO₂e

September 16, 2024

Three people—Vincent from the working group, artist Sonya Schönberger, and a camera person—returned to Morsleben and Beendorf to shoot Sonya’s film. They traveled by private car.

Emissions from this trip: 61 kg CO₂e

October 12, 2024 (fig. 30)

The trip to Leipzig’s Galerie für Zeitgenössische Kunst (GfZK) for the [Things That Were Are Things Again](#) exhibition, organized for nGbK members, was not officially part of *SALT. CLAY. ROCK.* Nevertheless, since it was a visit to a sustainably produced exhibition, we joined. The nGbK director, our shared climate officer, and our cocurator responsible for exhibition production used the opportunity—sitting undisturbed in the train’s dining car—to make a final decision regarding the material for the exhibition architecture. We had estimates for the global warming potential of various materials, including plaster, metal, fermacell, plasterboard, strawplates, and construction wood. The director of nGbK and the climate officer advocated for prioritizing strawplates, while the curator proposed incorporating lightweight metal structures. After reviewing the numbers, we concluded that the average result would be close to climate-neutral or would require only minimal compensation. For the mobile units, we chose black HPL (high-pressure laminate), which is not an environmentally friendly material due to its use of formaldehyde-containing adhesives. Our strategy to justify this choice was based on reusability: We did not lacquer or lime the surface and planned the construction in such a way that everything could simply be unscrewed and reused as raw material in a second life cycle. We also learned that after December 2024, Arqum would no longer allow us to include the biogenic impact of materials such as straw or wood in our carbon balance. This meant that the CO₂ these materials remove from the atmosphere will no longer be counted—resulting in a higher carbon footprint for the exhibition architecture.

The path to climate-neutral production definitely involves a process of trial and error.

[PDF of excel table of CO₂ calculations.](#)

Overall emissions related to the presentation of the artworks in the exhibition (production of exhibition display and artistic productions): 2558 kg CO₂e

October 26–27, 2024

Artist Anna Witt returned to Gorleben with a rented car to film an interview with two of her main protagonists, who were unavailable for the main video shoot the following week. Since the car was paid for through her scholarship at the University of Braunschweig, it does not appear in our climate accounting.

November 2024

To produce all the exhibition texts in both English and German, we relied on our own resources as well as AI-driven translation support.

One of our group asked ChatGPT about the emissions related to its use, and it responded that an average query produces about 2 grams of CO₂e.

So if we conducted around 100 AI-driven translations or proofreading queries during the exhibition text work, that would amount to approximately 200 grams of CO₂e. For comparison: a person living in Germany generates an average of 3,6 kg of CO₂e daily by using digital devices and tools. Sending a single email produces about 4 grams of CO₂e—so with an estimated 2,000 emails exchanged over the 2.5-year duration of the project, this would total around 8 kilograms. Emissions from the digital realm were not included in the carbon accounting framework of the Zero Fund, yet in the very end due to slight shift in the accounting framework a slight proportion of all emissions from digital activities was added: 48hrs of video calls, resulting in 0,1kg of CO₂e emissions.

November 1–2, 2024

Artist Anna Witt returned to Gorleben to shoot her film. She traveled the night before the shoot to the Beluga Triangle in the woods of Gorleben, taking the train to Salzwedel, where she was picked up by working group member Julia, who had traveled to Wendland in her private van. The van was used for transporting materials and food, and it was equipped with a heating system to keep the performers warm during the upcoming video shoot, as they would get wet during filming. While temperatures were below zero, the project relied on support from the local fire brigade, whose fire engines were incorporated into the film. The performers, who live in villages throughout the Wendland region, traveled by private car—most of them carpooling. Another protagonist in Anna's interview video also traveled by train to Salzwedel and was picked up by crew members. The cameraman traveled with his assistant and brought the equipment from Braunschweig in a private car. We chose to work with a local cameraman to minimize travel-related emissions. Catering was provided by a small guesthouse

near the Beluga Triangle, which served a seasonal, locally sourced pumpkin soup. The soup was served on ceramic plates, which were cleaned at the guesthouse. Tea and coffee were prepared in the production van.

As some of the travel costs were covered by Anna's scholarship at the University of Braunschweig, they do not appear in our climate accounting.

November 11–12, 2024 (fig. 31)

Today, artists Krisztina Erdei and Dániel Misota shared their film with the Bábaapáti community. The emissions from their accommodation, car travel, and the rental equipment needed to install the three-channel video installation were paid for and accounted for in our climate balance. Other costs and labor were covered by the community—including hospitality, event communication, and the event location in the village's Cultural House. Around forty people attended, including some from outside the village.

Over the weekend, the artists also filmed additional scenes and retrieved objects to be used in the exhibition's research display in Berlin.

Emissions from this event: 97,7 kg CO₂e

November 20, 2024 (fig. 32)

Shortly before the exhibition, we had a heated discussion about nGbK's proposal to keep the exhibition space at a low temperature, meaning no additional heating would be used to warm the circulated air. Many members of our working group were concerned that this could make visitors uncomfortable and discourage them from staying if they felt too cold. Having put so much work into the exhibition, we wanted to create conditions in which visitors could fully engage with the results. In the end, we agreed on maintaining a temperature of 18 degrees in the exhibition space and welcomed the idea of serving tea to visitors. nGbK also agreed to monitor temperatures, collect visitor feedback, and make adjustments if necessary. We also agreed that the space would be heated during events.

November 29, 2024

We estimated around 600 visitors at our [opening](#). This event made it difficult to monitor visitor travel using questionnaires, but we do know that many attendees arrived from the Trauermarsch, a demonstration against the severe cultural budget cuts in Berlin. At the end of the march, nGbK invited demonstrators to join us for tea and the exhibition opening. Their route led from Brandenburg Gate to Alexanderplatz.

The opening does not appear distinctly in the final carbon footprint. For mobility, the following emissions were calculated based on the travel expenses of the participants, the number of visitors counted during the entire duration of the exhibition and a coefficient derived from the travel questionnaire.

Estimation of overall emissions from visitor traffic related to the exhibition: 19156 kg CO₂e

Estimation of emissions from participants:
2470,8 kg CO₂e

January 17, 2025

Today, we decided to offset the permitted portion of our carbon emissions through a project that provides energy-efficient cooking ovens in Bangladesh. Given Bangladesh's heightened vulnerability to the climate crisis, investing in food security and sustainable cooking practices in the region seemed like a meaningful way to offset our emissions.

Initially, we considered selecting a compensation project that was thematically connected to our work and located within the region we operated in—Europe—reflecting on the fact that nuclear waste is intended to remain within the national borders of the country that generated it. However, no accredited compensation projects are currently available in Europe. The controversial world of carbon offsetting—a process that allows companies and projects to become net-zero rather than climate-neutral—is something we neither have the time nor space to fully engage with. We'll let the website of the compensation company, [Knauber Proklima](#), speak for itself. Their company motto, "Immer weiter: Energie" (roughly: "Always Onward: Energy"), seems rather curious in relation to our project's critical reflections on humanity's pursuit of endless energy.

January 22, 2025

Today, Virág from the climate-neutral working group and Elie, the climate officer, met to go through Elie's questions regarding the carbon calculations and the CO₂ logbook. Using the draft version of the logbook as a basis, Elie corrected some of the assumptions we had made about the calculation process. The climate balance will include not only emissions tied to invoices but also those we can reconstruct from documentation and memory. For example, in the lead-up to the exhibition installation, Elie was slightly ill and chose to use his private car to pick up exhibition materials, not wanting to risk exhausting himself with a bike ride. Even though these expenses were not reimbursed, he will include the related emissions, as part of his responsibility to document how purchased materials arrived at

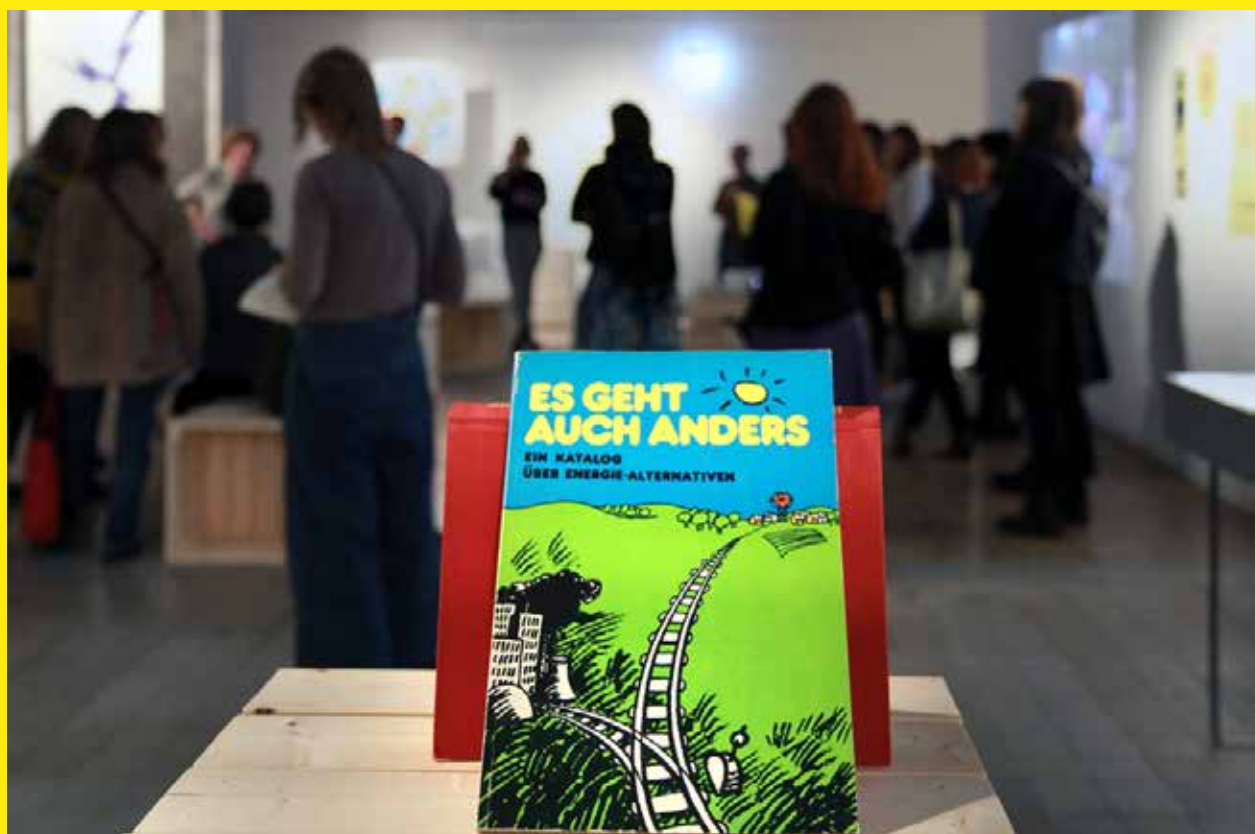
nGbK. This kind of carbon accounting involves a significant amount of forensic reconstruction—piecing things together through documentation, memory, or reasonable estimation. While a numerical result will emerge in the end, it will inevitably remain something of a fiction.

Looking at Elie's complex Excel sheet, it seemed relatively straightforward to determine how much CO₂e was associated with each activity within the project. Once the carbon accounting is complete, we plan to include the related emissions alongside each entry in the logbook. We hope this will become a helpful point of reference for others interested in carbon-neutral art production.





fig. 18, fig. 19



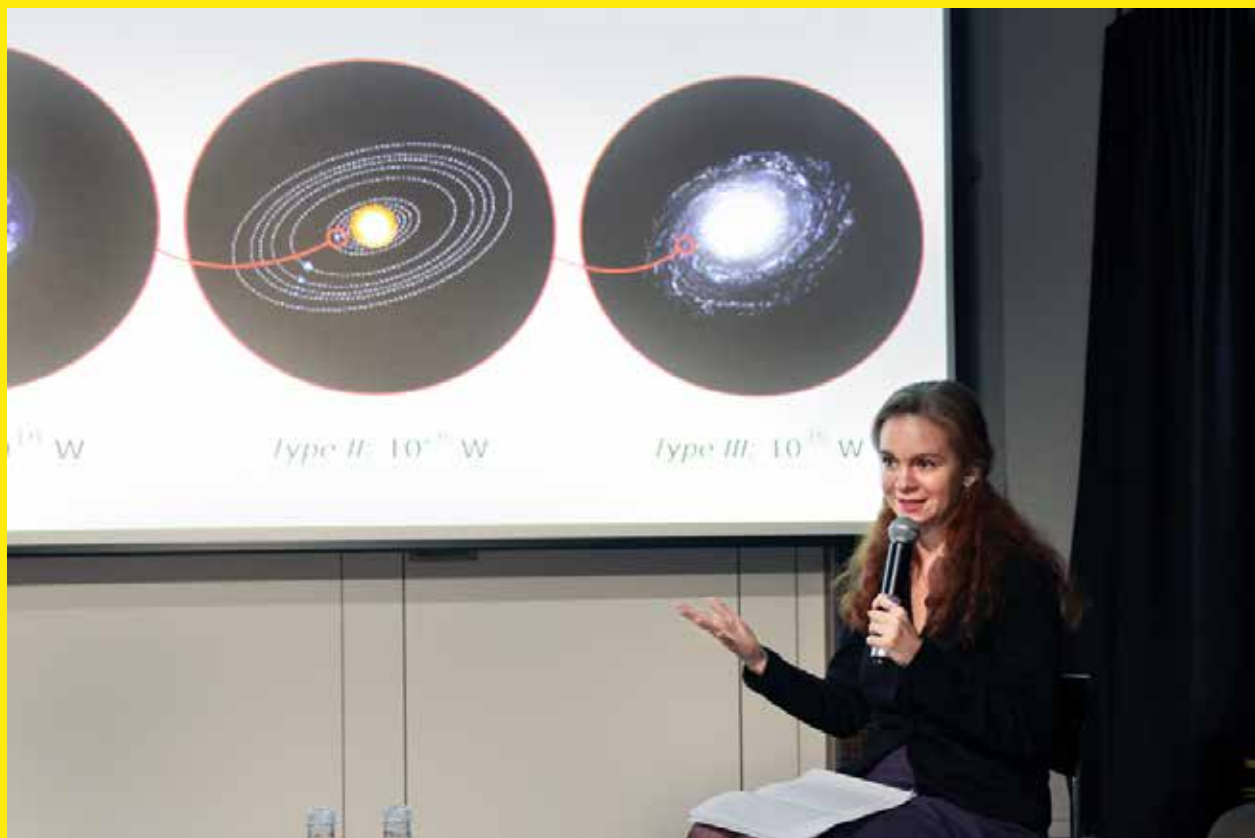


fig. 20, fig. 21, fig. 22

First things first

choose to do it climate-neutral





fig. 23, fig. 24





fig. 25, fig. 26





fig. 27, fig. 28





fig. 29, fig. 30

Bearbeiter: Elie Feuvrel

Stand 17.10.2024

B. Material Aufbau						Globales Erwärmungspotenzial (GWP)					
Detail	Ersteller	zur Positi EP	SOLL in €	IST in €		Faktor	quelle	Detail	Menge	Gesamt	
						Kg/Kg CO2k	für Faktor	alternativ	Material	Kg/m2...	kg CO2-Äqv.
B.1 Raumdesign/Architektur											
B.1.1. Metalprofil	8 Uprofile 5x300cm; 16 Cprofile 5x350cm; 500 Schrauben 30cm Anschlussdichtung	possing		175,71		3,30	Ökobaudat Rilduce (Rohstahl)		Gewicht 0,66k g/lftm	80,00	264,00
B.1.2. Gipskarton Bauplatte	8 5mm - 125x200cm	possing	136/Stk	234,00		1,38	Ökobaudat (end of life)	0,215 (FtNB) für Roh A-Gips	10kg/m2	270,00	372,60
B.1.2.1. Gipsfaserplatte (Fermacell)	125 x 250cm	possing		14,80€/m2	355,00	-0,45	m2 Fermacell EPD			27,00	-12,15
B.1.2.2. Claytec Lehmbauplatte	125 x 62,5 x 2,2cm	possing	346/stk	1.086,40		0,64	Ökobaudat pro m2 Lehm hersteller	0,48(FtNB) nur Erhaltung		27,00	17,28
B.1.2.3. Strohbauplatten	210x90x4cm	Istraw	216m2=400 kg/stk	1.079,94		-39,26				26,88	-1055,31
B.1.2. Molton schwarz	Eventroom Gelb gegen Schwarz tauschen 10ftm 3m Hoch	molton 24		12,80€/ftm	150,00	11,10	eeew (Baumwollgewebe)	16,0(ademe)	30m2 300g/m2	9,00	99,90
B.1.3. Farbe											
B.1.3. Farbe Kreide	Ana Alenxo Blau, 2,5L	Tonie Green			97,00						
B.1.4. Farbe Lack	Anna Witt 2L	Kazca			150,00	3,20	(woodprocess Waterbased paint	6,74 Lack schwarz(ademe)		3,00	9,60
B.1.5. Holz						0,12	eeew (unbehandelt)				
B.1.5.1. Ana Witt gelbe Latten	Theaterlatten 22x120mm - 12 Stk		17,70€/ 6m Stk	268,00		0,21		0,21(idemat - pine)	6,35kg/Stk x11	69,85	14,67
B.1.5.2. Ana Witt Leinwand 368 x 207 cm (16/9)	MDF 8mm 410 x 207cm - 2 Stk		54,74€/stk	109,48		0,63		0,63 (Idemat)	55,8kg/stk x2	111,60	70,31
B1.7.3. MDF Schwarz - 7m2	19mm Stärke	Possing		42,26/m2	295,40	0,63		0,63 (Idemat)	14,2Kg/m2 x7	99,10	62,43
B.2.2 Audio/Video Elektronik Divers	HDMI Kabel, Adapter...				100,00						
B.3. Blueback Papier Sonya, Mariko, Andriis	Plakatt, Kleister 3mal 4 x 3m	Ele (Stk.)	geschätzt	600,00		4,02	2,64 printing process.	+1,38 - papier eeew	36m2x 200g	7,20	28,94
B.4 Ana Alenxo - Abzempung	wie auf Pancake Foto von Vinz	abspern.de		275,00							
B.4. Art Handling	Divers			100,00							
B.5. Gerüstpflege/ Anschaffung...	Sonstiges			150,00							
B. Material Aufbau gesamt									Gesamt CO2e Material in Kg		-605,36



fig. 31



fig. 32

COLOPHON

This logbook is published on the occasion of the exhibition
and research project:

SALT. CLAY. ROCK.

On Nuclear Pasts and Radiant Futures

neue Gesellschaft für bildende Kunst, Berlin

Exhibition: 30 November 2024 – 9 February 2025

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All links last accessed: April 2025

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Time, 2024 / SALT. CLAY. ROCK

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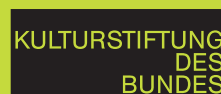
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