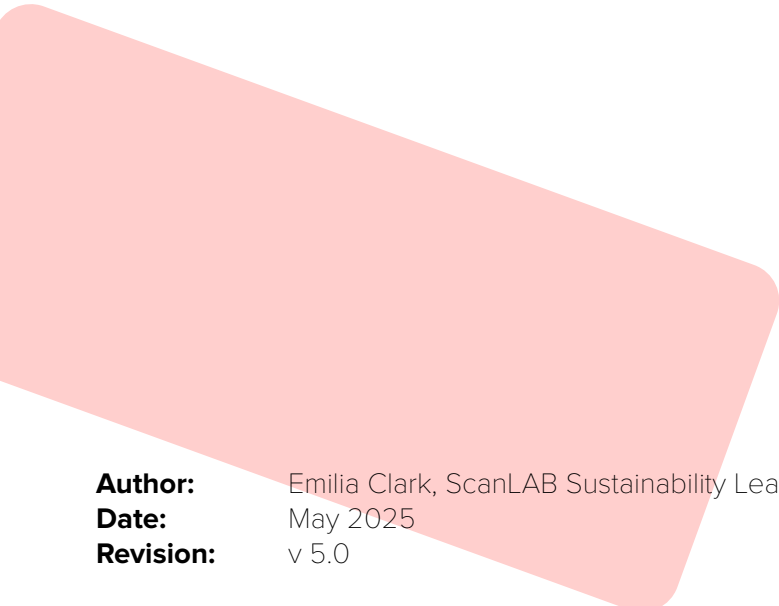


# SUSTAINABILITY

## **CASE STUDY 03:**

Exhibiting FRAMERATE: Pulse of the Earth



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**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Case Study Headlines:

Exhibiting FRAMERATE: Pulse of the Earth has produced

**18.67 tCO<sub>2</sub>e**

This makes up

**52.49%**

of the project's total carbon footprint

FRAMERATE has reached a

**12,264**

estimated in-person audience

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## What is a ScanLAB Sustainability Case Study?

Each year, we commit to conducting at least one in-depth Case Study which interrogates and documents the impact of particular elements of our studio's work. Case Studies exist within the context of our wider studio **Sustainability Policy** and **Sustainability Impact Reports**.

Case Studies focus on a particular event, part of a production, or decision-making process within a project that feels worthy of deeper notes for ourselves and for the wider community.

Case Studies will sometimes focus on a particular aspect of sustainability. For example the first two are primarily focused on the **Environmental Impacts** of their subject matter.

We aim for these Case Studies to:

- Test and highlight the use of our **Monitoring** and **Decision-making** tools
- Evaluate the impact of individual elements or decisions by reporting in the context of the project's success, limitations and finances
- Draw conclusions that inform future decisions
- Share our learnings

We don't define a rigid Case Study format; we tailor each to their context and content with the goal of providing useful insights.

**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Case Study Activities & Goals:

### **Project Context:**

FRAMERATE is a large body of work that has developed new creative processes and tools to observe landscape change over time using 3D scanning technology. So far, the FRAMERATE project has comprised four key phases of production and exhibition:

- FRAMERATE: Pulse of the Earth, a multi-screen immersive installation made up of timelapse scans from Norfolk and Glasgow.
- FRAMERATE: Pulse of the Earth featuring Echoes from Taiwan, a version of the above installation including scans from various locations in Taiwan.
- FRAMERATE: Rhythms Around Us, an adaptation of Pulse of the Earth produced for the Tribeca Film Festival to show in a projection room at the new venue Mercer Labs in New York City.
- FRAMERATE: Desert Pulse, an upcoming project with the Desert Botanical Garden in Phoenix, Arizona, for which we are currently undertaking a year-long period of scanning in Arizona.

This case study is concerned with the environmental impact of showing

**FRAMERATE: Pulse of the Earth**, and **FRAMERATE: Pulse of the Earth featuring Echoes from Taiwan**.

The installation occupies a blackout space of approx 100 sqm in which a carefully designed arrangement of eight 65 inch OLED TVs display synchronised visuals and audio above, below and around the audience. The exhibition normally involves an onboard / offboarding space in which audiences can read wall texts about the piece and prepare to enter the experience. The work has a max audience capacity of around 60 people / hour. So far, we have shown the work at:

- SXSW (Austin, Texas; 12th - 15th March 2022)

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## Case Study Activities & Goals:

- Venice Biennale (Venice, Italy; 31st August - 10th September 2022)
- BFI London Film Festival (BFI LFF) (London, UK; 5th - 6th October 2022)
- PHI Centre (Montreal, Canada; 22nd March - 11th June 2023)
- Taiwan Creative Content Festival (TCCF) (Taipei, Taiwan; 7th - 12th November 2023).

**Case study goals:**

Previous case studies have interrogated the impact of the production stage of FRAMERATE ([CASE STUDY 01](#)) and our decision making around the initial exhibition of the artwork internationally ([CASE STUDY 02](#)). Our first Case Study found that between the Norfolk and Glasgow phases of initial FRAMERATE scanning, we made changes to our environmental decision-making which allowed us to make a 95% reduction in the daily run impact of the project.

The motivation behind this case study is:

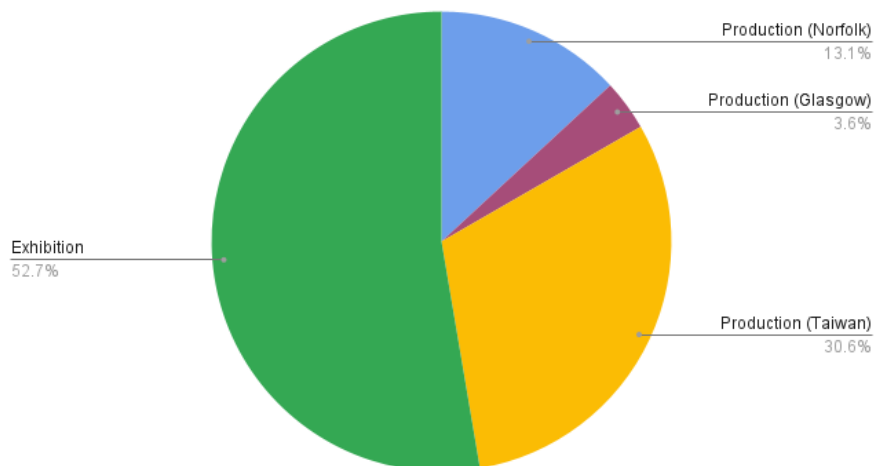
- To interrogate the impact of the ways in which we have presented this multi-screen immersive art installation both in the UK and abroad. This will enable us as a studio to make better decisions about where and how to show Pulse of the Earth and other works in the future. We also aspire for the findings to be helpful to others making similar international touring decisions.
- To ensure that we are transparent with our audience, collaborators, and the rest of the industry about what we do as a studio. The wider FRAMERATE project makes up a significant proportion of studio time, from management to individual employees. We hope that internationally sharing our artworks becomes a growing part of our studio's effort and energy over the coming years. As we work on this key project and strive for the broader studio goals, we want to interrogate the impact of that against our sustainability aims.

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## Project footprint:

In total, making and exhibiting FRAMERATE: Pulse of the Earth has so far produced 35.45 tCO<sub>2</sub>e. Of this total footprint, 16.78 tCO<sub>2</sub>e was generated by producing the project, and the remaining 18.67 tCO<sub>2</sub>e was a result of exhibiting the project. The balance between Production (making the work) and Exhibition (showing the work) emissions is illustrated in the pie chart below.



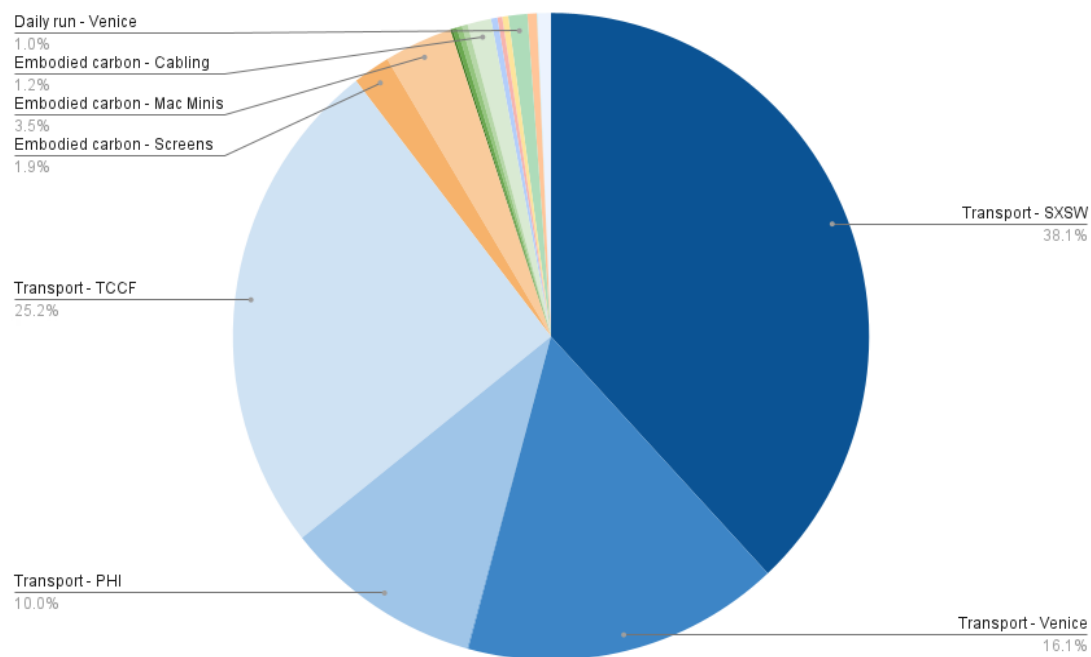
The above figures include the emissions associated with the production of the first international chapter of FRAMERATE in Taiwan. This production included international flights, and as a result produced a much larger footprint than the long-term scan production stage in Norfolk and Glasgow. We believe that this impact is important to include and understand, particularly as we continue to produce international chapters of FRAMERATE, including in Arizona.

A breakdown of the FRAMERATE: Pulse of the Earth exhibition footprint is summarised in the charts below:

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FRAMERATE: Exhibiting an environmental artwork

## Project footprint (cont.):



Please note that these calculations exclude the emissions generated by the venue (e.g. as a result of the venue's heating, air conditioning, lighting, and other energy uses. We have excluded these as they are beyond our control, and are standard for all artists exhibiting at the venue, not due specifically to the exhibition of FRAMERATE: Pulse of the Earth.



**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Project footprint (cont.):

Type	Location	Carbon dioxide equivalent
Transport	SXSW	7,109 kgCO <sub>2</sub> e
	Venice	3,011 kgCO <sub>2</sub> e
	BFI	12 kgCO <sub>2</sub> e
	PHI	1876 kgCO <sub>2</sub> e
	TCCF	4,704 kgCO <sub>2</sub> e
Daily run energy use	SXSW	57 kgCO <sub>2</sub> e
	Venice	180 kgCO <sub>2</sub> e
	BFI	87 kgCO <sub>2</sub> e
	PHI	6 kgCO <sub>2</sub> e
	TCCF	128 kgCO <sub>2</sub> e
Embodied carbon	Screens	354 kgCO <sub>2</sub> e
	Mac Minis	648 kgCO <sub>2</sub> e
	NETGEAR Switch	20 kgCO <sub>2</sub> e
	Synology Router	45 kgCO <sub>2</sub> e
	QSC Speakers	50 kgCO <sub>2</sub> e
	TV Mounts	54 kgCO <sub>2</sub> e
	Cabling	225 kgCO <sub>2</sub> e
	Beanbags	60 kgCO <sub>2</sub> e
	Wooden benches	46 kgCO <sub>2</sub> e

Each of these emissions sources is broken down and analysed below.

**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Project footprint (cont.):

### Transport

Transport is the single biggest contributor to FRAMERATE: Pulse of the Earth exhibition emissions, making up 87.8% of the exhibition footprint.

The travel requirements for each showing of FRAMERATE: Pulse of the Earth are summarised in the table below:

Exhibition	Significant ScanLAB team travel required?	Significant equipment transport required?
SXSW	Yes	No
Venice	Yes	Yes
BFI	No	No
PHI	No	No
TCCF	No	No

The challenges associated with travel for each exhibition of FRAMERATE: Pulse of the Earth were different:

- For SXSW, we hired a lot of the AV equipment in Austin, Texas, but had to transport three ScanLAB team members to Austin, necessitating a number of transatlantic flights.
- For Venice, we had to ship the AV equipment, and four ScanLAB team members travelled out, but this only necessitated flights within Europe and we were able to choose overland equipment transport rather than air freight to minimise the emissions associated with kit transport.
- For BFI, the exhibition location was practically on our doorstep, so we were able to keep travel emissions to an absolute minimum.
- For PHI, the majority of the equipment necessary for the installation was provided by the PHI Centre, and we were able to keep our transatlantic

**CASE STUDY 03:**

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## Project footprint (cont.):

travel to an absolute minimum, helping us to minimise our transport emissions even though the exhibition location is in Canada. As transatlantic travel was necessary, we committed to making the most of the trip; we carried out a series of meetings in North America with potential collaborators and clients.

- For TCCF, the majority of the equipment necessary for the installation was similarly provided by TAICCA. We minimised our long-haul travel by reducing the number of team members travelling to one but this single flight still has a huge carbon footprint. Again, however, we maximised the benefit of these flights by organising workshops, public talks, and meetings with various venues while the team were in Taiwan.

### Energy and Resources

#### Embodied carbon

Embodied carbon is the CO<sub>2</sub> emissions associated with the manufacture of materials before they become operational. It includes, for example, the CO<sub>2</sub> emitted from material extraction, transport, and construction.

The embodied carbon of the FRAMERATE equipment is summarised below:

Item	Carbon	Source
LG OLED OLED65A16LA	40 kgCO <sub>2</sub> each	<a href="https://www.lg.com/global/greener-products-application">https://www.lg.com/global/greener-products-application</a>
Mac Mini M1	72 kgCO <sub>2</sub> each	<a href="https://www.apple.com/environment/pdf/products/desktops/Mac_mini_PER_Jan2023.pdf">https://www.apple.com/environment/pdf/products/desktops/Mac_mini_PER_Jan2023.pdf</a>
NETGEAR Switch	20 kgCO <sub>2</sub> e*	N/A
Synology Router	45 kgCO <sub>2</sub> e*	N/A

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## Project footprint (cont.):

Item	Carbon	Source
QSC Speakers	50 kgCO <sub>2</sub> e*	N/A
TV Mounts	6 kgCO <sub>2</sub> e per mount* (54 kgCO <sub>2</sub> e total*)	N/A
Cabling	225 kgCO <sub>2</sub> e*	<a href="https://www.cableizer.com/blog/post/embodied-energy-and-carbon/">https://www.cableizer.com/blog/post/embodied-energy-and-carbon/</a>
Beanbags	60 kgCO <sub>2</sub> e*	N/A
Wooden benches	11 kgCO <sub>2</sub> e per bench (46 kgCO <sub>2</sub> e total)	<a href="https://greenbuildingencyclopedia.uk/wp-content/uploads/2014/07/Full-BSRIA-ICE-guide.pdf">https://greenbuildingencyclopedia.uk/wp-content/uploads/2014/07/Full-BSRIA-ICE-guide.pdf</a>

\* Denotes an estimated figure

NB. These lifecycle emissions include usage emissions, so we are double-counting some of our impact here.

### Running energy

Running FRAMERATE involves the following pieces of electrical equipment:

- 8 LG OLED65A16LA screens
- 9 Mac Mini M1s
- NETGEAR Switch
- Synology Router
- 2 QSC Speakers

The daily energy consumption of each of these is summarised in the table below:

Item	Consumption / day	Source
LG OLED OLED65A16LA	0.2986 kWh	<a href="https://www.displayspecifications.com/en/model/8400251a">https://www.displayspecifications.com/en/model/8400251a</a>

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## Project footprint (cont.):

Item	Consumption / day	Source
Mac Mini M1	0.936 kWh	<a href="https://www.applemust.com/yes-you-can-cut-your-energy-bills-with-an-m1-mac-mini">https://www.applemust.com/yes-you-can-cut-your-energy-bills-with-an-m1-mac-mini</a>
NETGEAR Switch	0.118 kWh	<a href="https://www.cdw.com/product/netgear-8-port-gigabit-ethernet-switch-plug-and-play-gs108/3507399">https://www.cdw.com/product/netgear-8-port-gigabit-ethernet-switch-plug-and-play-gs108/3507399</a>
Synology Router	0.48 kWh	<a href="https://mariushosting.com/how-much-electricity-power-does-a-synology-nas-use/">https://mariushosting.com/how-much-electricity-power-does-a-synology-nas-use/</a>
QSC Speakers	19.2 kWh	<a href="https://www.qsc.com/solutions-products/loudspeakers/portable/powered/portable-pa/cp-series/cp12/">https://www.qsc.com/solutions-products/loudspeakers/portable/powered/portable-pa/cp-series/cp12/</a>

This implies that the total energy draw of FRAMERATE per day is 49.81 kWh. This energy consumption will generate a different amount of kgCO<sub>2</sub>e/kWh in different countries depending on the carbon intensity of electricity generation in each country. Countries with a larger proportion of renewable energy generation, like Canada, will have less carbon-intensive electricity generation in comparison to countries with a smaller proportion of renewable energy generation, like Italy and Taiwan. Live data on the carbon intensity of electricity generation in different countries can be found [here](#).

We can therefore calculate the energy consumption and associated CO<sub>2</sub>e emissions for each of our exhibitions, as follows:

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## Project footprint (cont.):

Festival	Location	# of days	kgCO <sub>2</sub> e/kWh*	Emissions
SXSW	USA	4	0.2883	57.44 kgCO <sub>2</sub> e
Venice Biennale	Italy	11	0.3286	180.04 kg-CO <sub>2</sub> e
BFI London Film Festival	UK	12	0.1462	87.39 kgCO <sub>2</sub> e
PHI Centre	Canada	89	0.0013	5.76 kgCO <sub>2</sub> e
Taiwan Creative Content Festival	Taiwan	6	0.4292	128.27 kg-CO <sub>2</sub> e

\* These numbers are taken from <https://app.electricitymaps.com/map>. To get the most accurate data for each installation, we use 30-day averages from the end of the installation period.

The total daily run emissions of exhibiting FRAMERATE: Pulse of the Earth so far is 459 kgCO<sub>2</sub>e.

### Exhibition Build

FRAMERATE: Pulse of the Earth requires a blackout space and a physical audience journey. Each exhibition therefore necessitates a different level of build in order to achieve these needs. The level of build depends on the nature of the venue, the associated event, and the budget. These can vary from quite comprehensive exhibition builds (e.g. at the Venice Biennale where large scale semi-permanent partition walls were built) to simple installations (e.g. at BFI London Film Festival where the entire space was created from hired black drape).

For each installation we have calculated the approximate embodied energy of the most significant and variable elements of these exhibition builds. We do so in a relatively broad manner, i.e. we assume a full partition wall build is the same

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FRAMERATE: Exhibiting an environmental artwork

Project footprint (cont.):

embodied energy per sqm in Venice as in other locations.

The table below summarises estimates of the embodied carbon of each kind of FRAMERATE: Pulse of the Earth installation build per metre.

Wall build options			Signage and vinyls		Flooring	
Existing walls (painting)	Rented pipe & drape	Plaster-board	No signage	Vinyl signage	Existing flooring	New carpeting
0.88 kg-CO <sub>2</sub> e/m <sup>2</sup>	1.5 kg-CO <sub>2</sub> e/m	20 kg-CO <sub>2</sub> e/m <sup>2</sup>	0 kg-CO <sub>2</sub> e/m <sup>2</sup>	7 kg-CO <sub>2</sub> e/m <sup>2</sup>	0 kg-CO <sub>2</sub> e/m <sup>2</sup>	4 kg-CO <sub>2</sub> e/m <sup>2</sup>

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# Monitoring and Results in Context:

At ScanLAB we have our own **Environmental Monitoring System** to track the carbon footprint of our studio and our projects, and we have committed to reporting the results annually. This system categorises all impact by project and in this section we are highlighting the results of that monitoring process to interrogate in detail the impact of exhibiting FRAMERATE: Pulse of the Earth.

The carbon footprint and visitor numbers for each FRAMERATE: Pulse of the Earth installation (not including the production of the project) is summarised below:

	SXSW	BFI LFF	Venice Biennale	PHI Centre	TCCF	Overall
Carbon footprint (kgCO <sub>2</sub> e)	7,166	100	3,191	1,882	4,832	18,605
Visitor numbers	1,200*	2,227	2,600*	4,837	1,800*	12,264
kgCO <sub>2</sub> e per visitor	5.97	0.05	1.23	0.39	2.68	1.52

*\* Denotes an estimate*

## Carbon Footprint

The total Carbon Footprint of all the installations was 18.67 tCO<sub>2</sub>e. This represents 52.68% of the total emissions that the entire 4+ year FRAMERATE project has created. Together, these emissions represent 24.31% of ScanLAB's 2021/22, 2022/23, and 2023/24 carbon footprints.

The emissions for exhibitions that were closer to home - like the BFI London Film Festival - are obviously lower. However, we are proud that we were able to emit significantly less through exhibiting at the Taiwan Creative Content Festival



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## **Monitoring and Results in Context (cont.):**

in Taipei than at SXSW in Austin, Texas; this was because of our decision to optimise the number of team members travelling for the exhibition. We were also able to exhibit with a relatively small carbon footprint at the PHI Centre in Montreal, Canada, again due to our decision to optimise team travel and thanks to the support of the PHI Centre team with hiring equipment and setting up the installation. In contrast, we shipped our equipment out for the Venice Biennale and sent four team members over for the installation, resulting in a higher footprint despite relative geographical proximity. This was unavoidable as the festival was not able to provide the audiovisual equipment necessary for the installation, and did not have an on-site team able to set up, run, and de-rig the installation.

### **Audience Impact**

As expected, the kgCO<sub>2</sub>e per visitor tends to be lower the closer to home a FRAMERATE: Pulse of the Earth installation takes place - with the installation at the BFI LFF producing only 0.05 kgCO<sub>2</sub>e per visitor! That said, the number of audience members that experienced the installation at the PHI Centre meant that our kgCO<sub>2</sub>e per visitor was also below 0.5 for that installation. The emissions per visitor were much higher at SXSW and at the Venice Biennale. In future this would trigger us to evaluate much more carefully the opportunity to exhibit there, however both festivals offer excellent business opportunities, raising our profile and connecting with both industry insiders and externals, often leading to new commissions. We have interrogated the decision to exhibit at SXSW in depth in our second case study, available [here](#).

In the future, we are interested in exploring the wider impacts of drawing audiences to see a work, including the environmental implications of the modes

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FRAMERATE: Exhibiting an environmental artwork

## **Monitoring and Results in Context (cont.):**

of travel that they use to reach the work but also the less tangible positive impacts that seeing a work might have on audiences in terms of their future actions towards the climate. Where possible, we will look to explore this impact using post-experience surveys to understand audiences' attitudes to environmental change before and after experiencing FRAMERATE.

Dividing the total FRAMERATE: Pulse of the Earth impact (that is, the impact of both the production and the exhibition of the installation) by the number of visitors therefore gives an estimated carbon footprint per audience member of 2.89 kgCO<sub>2</sub>e, equivalent to each audience member driving just under 11 miles in an average petrol car.

### **Comparing our impact within the industry**

As the vast majority of UK SMEs do not publish their carbon footprints, it is difficult to find good comparators for a project like FRAMERATE: Pulse of the Earth.

#### Okawari

The best comparator for FRAMERATE: Pulse of the Earth is another immersive experience, [Okawari](#). Okawari is an interactive experience by Landia Egal and Amaury La Burthe which premiered at the Venice Biennale alongside FRAMERATE: Pulse of the Earth. It invites its audience to question their relationship to over-consumption, digitalisation, and the passage of time. Okawari was produced with sustainable production in mind, and the team at Tiny Planets produced a [detailed carbon footprint](#) for the project, including an in-depth analysis of the travel impact of the Venice audience travelling to see the project. They calculated an overall project footprint of 44.81 tCO<sub>2</sub>e, but this includes 33.3

**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Monitoring and Results in Context (cont.):

tCO<sub>2</sub>e as a result of audiences travelling to Venice, so only 11.52 tCO<sub>2</sub>e as a result of the production / making of the piece. Note here that there is a methodological difference between Tiny Planets' measurements and ours; they allocate studio overhead emissions to individual projects, but we do not.

The Okawari footprint is lower than the overall FRAMERATE: Pulse of the Earth production footprint of 16.78 tCO<sub>2</sub>e, but as Okawari did not necessitate international travel a better comparison might be to the production of FRAMERATE: Pulse of the Earth in Norfolk and Glasgow, which produced only 5.91 tCO<sub>2</sub>e. This is encouraging as it suggests that we are producing our work sustainably even in comparison to sustainable production leaders in our industry; however, the fact that we do not allocate studio overhead emissions (like the emissions generated by the lighting, heating, and computers running in our studio) to individual projects means that the comparison here is imperfect.

We really respect the detailed documentation work that Tiny Planets completed for this project, and the way sustainability messages manifested throughout the work. We'd also like to make clear that we don't think comparing our figures like for like is conclusive; both studios have developed our own methodologies for tracking and including impacts. Instead of direct comparisons we hope the examples set by both our work and theirs encourages others to follow suit.

### Earth Speakr

[Earth Speakr](#) is an artwork created by Studio Oliafur Eliasson with children and young people from across the world. It invites young people to speak up for the planet and the future they want through an app, interactive website, AR experience, and audio-visual presentations. [Julie's Bicycle](#) worked with Studio

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FRAMERATE: Exhibiting an environmental artwork

## Monitoring and Results in Context (cont.):

Oliafur Eliasson to prepare a carbon footprint covering the development phase and the first six months of the artwork.

They found that the total carbon footprint of the project over this time period was 29.1 tCO<sub>2</sub>e, broken down as follows:

- Travel: 11.9 tCO<sub>2</sub>e
- Materials: 6.6 tCO<sub>2</sub>e
- Freight: 1 tCO<sub>2</sub>e
- Website: 8.9 tCO<sub>2</sub>e
- Work devices: 0.5 tCO<sub>2</sub>e
- Online meetings: 0.2 tCO<sub>2</sub>e

This is significantly lower than the total FRAMERATE: Pulse of the Earth production and exhibition footprint. However, there are several key differences between FRAMERATE and Earth Speakr:

- The time period; the FRAMERATE: Pulse of the Earth footprint comprises several years of scanning and exhibition in contrast to the period covered by the Earth Speakr footprint, which covers just over a year.
- The requirements of FRAMERATE: Pulse of the Earth production and exhibition; the FRAMERATE project necessitates sending scanning teams to our locations daily throughout the scanning period, and transporting all our audiovisual equipment to exhibition locations, in contrast to Earth Speakr, which does require travel but has a significant online component.

Despite these differences, it is really encouraging to see another studio interrogating their impact in a similar way to us, and the learnings from the Earth Speakr footprint - such as how the Studio Oliafur Eliasson team decided to deal

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## Monitoring and Results in Context (cont.):

with scrapping materials purchased for the project - are invaluable.

### Documentary film production

Another useful comparator for FRAMERATE: Pulse of the Earth is documentary film production. FRAMERATE scanning involves small, specialised teams travelling to specific locations to record data, which is then processed in-house at our London studio.

[BAFTA albert's 2023 report](#) found that the average emissions intensity for factual programmes is 15.2 tCO<sub>2</sub>e/hour. Given that the average length of a factual programme is between 60 and 90 minutes, we can assume that the average factual programme has an overall carbon footprint of 22.8 tCO<sub>2</sub>e.

This is also significantly smaller than the FRAMERATE: Pulse of the Earth footprint. However, since the FRAMERATE: Pulse of the Earth project has so far comprised three periods of scanning (two long-term periods in Norfolk and Glasgow and one short-term period in Taiwan), and has run over several years rather than the months usually required to shoot a documentary film, we believe that our footprint is not significantly more intensive than documentary film production.

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FRAMERATE: Exhibiting an environmental artwork

## Key Learnings:

### **Who travels for FRAMERATE exhibition setups**

Our sustainable travel policies and understanding of how to mitigate our travel impact have developed alongside the FRAMERATE project and associated exhibition opportunities.

Alongside the emissions impact there are multiple factors that have and continue to influence who travels from ScanLAB for FRAMERATE: Pulse of the Earth installations including:

- Cost.
- The specialist technical, creative, or production need for team members to be involved in setup.
- The need for leadership to represent the work at associated events.
- The business development possibilities of being at specific events.
- The creative reward for team members to see their work have an impact in the world.

At the earlier international installations of Pulse of the Earth (SXSW and Venice) a larger team travelled as we required their specialist skillsets to install the work for the first time, and to represent the work and studio at these prestigious events.

As our experience in showing the work has increased and the technical robustness of the work has been proven we have reduced this attendance to just a single studio director who leads a skilled local setup team and represents the work. We also aim to maximise this travel with additional business development in the region. In North America this single international travelling director has been supported by our strategic advisor who is based between San Francisco and New York.

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## Key Learnings (cont.):

While limiting the potential emissions of these international exhibitions this decision making has also limited the opportunity for team members outside of leadership to experience their work on show at major venues, and thus the individual growth and sense of achievement that would be afforded by that experience. We have addressed this in more recent exhibitions of FRAMERATE: Pulse of the Earth.

### **Hire vs. purchase of technology**

The decision between purchasing and renting equipment has always been difficult for us.

From an environmental perspective we consider three key attributes when deciding on the use of technology for exhibitions:

- Embodied energy.
- Transport emissions.
- Cost.

From a creative and technical perspective we are very precise about the quality and performance of the technology we use, especially when it comes to:

- the performance of playback systems,
- the visual quality and consistency of screens, and
- our ability to test and guarantee the technology before installation.

Finally, the variation in cost between local hire and transportation of our own equipment is a considerable factor in each exhibition decision.

**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Key Learnings (cont.):

The combination of these perspectives has led us to the following position on the use of hired and purchased equipment.

ScanLAB owns a full set of the technology required to exhibit FRAMERATE: Pulse of the Earth, primarily the screens, playback Mac Minis and associated power and cabling infrastructure. This guarantees that we provide the quality of performance and visual fidelity required, is more cost effective over long exhibition periods, and provides an additional studio resource for other projects and prototyping.

- Within the UK and Europe we transport this equipment in the least environmentally impactful manner.
- As we continue to use this technology resource both in exhibition and in studio, the embodied energy is spread.
- For exhibitions beyond Europe the environmental impact of shipping our own AV hardware far outweighs the benefits in embodied energy (for example, shipping our kit to Taiwan would have produced 21.98 tCO<sub>2</sub>e alone!) and as such we request like for like local rental provision. We continue to ship a much smaller set of key playback technology (i.e. the Mac Minis and networking infrastructure).

### **How do we measure positive impact?**

An ongoing question throughout our work on sustainability is how we can balance something that we know is bad (carbon emissions), which is easily quantifiable, with something that we know is good (benefits to our business from new opportunities, new collaborators, and prestigious venues), but which is much less easily quantifiable. One potential metric for this, audience numbers, has been analysed above, but we also know that this does not correlate with business



**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Key Learnings (cont.):

benefit. For example, fewer people saw FRAMERATE: Pulse of the Earth at SXSW than at the PHI Centre, but we have a more significant list of new artistic and business opportunities from the SXSW exhibition than from PHI, which might be a factor related to the type of audience attracted to these events.

We have a similar lack of insight into the success of the wider objectives of the work in delivering its message, asking audiences to think deeply about our species's impact on the planet. If funding allows a medium term aim for future work within the FRAMERATE series is to work with impact organisations and producers to rigorously understand, deliver and quantify this potential.

These are ongoing questions for us as a studio, particularly as we continue to try to reduce our carbon emissions while also trying to grow the studio.

**CASE STUDY 03:**

FRAMERATE: Exhibiting an environmental artwork

## Conclusions:

We're glad we are doing this work, shedding light and putting quantifiable data on the table to critique assumptions we might have about the emission impacts of sharing this artwork around the world.

The case study does not provide any simple answers that confirm we should be exhibiting here and not there, but it is part of a helpful process whereby we do feel like we've established an internal shorthand that makes sure we make the best sustainability decisions, quickly. This work ensures that sustainability is a decision making parameter that weighs in alongside the very real fiscal needs of the studio to do work, take the excellent opportunities we are offered to exhibit on the world stage and to earn the money that sustains our work and our teams.

Ultimately the larger point still remains: to be truly minimising our emissions we would stop travelling internationally, which would mean not making and sharing our work outside of the UK, but that reductive approach does not align with our wider ambitions and beliefs as a studio.

Our next steps are to better understand the positive impacts of sharing this work and therefore better understand how to have more positive impact. Then we can begin to ensure the emissions and the team energy that sharing this work involves are truly worth the costs.