

# Our net zero roadmap



# Foreword by the CEO.

Dear reader,

As we stand on the threshold of a new era in space exploration, I am honored to present Beyond Gravity's first decarbonization roadmap and net zero commitment. Standing at the forefront of innovation, technology and discovery, our commitment is not just to space missions, but to ensuring that this journey is undertaken in a responsible and sustainable manner.

Even though missions such as Artemis are working on getting to Mars in the near future, one thing is certain. For the time being, Earth will remain humanity's only home. However, climate change caused by humans is threatening our environment and the future of generations to come. It is our collective responsibility to take up this challenge.

As a space company, we have a unique role to play in shaping a sustainable future. Many missions in which we are involved – such as the Arctic Weather Satellite, NASA's climate satellites, the Copernicus Earth observation program or the weather satellites of the MetOp program – contribute to a better understanding of the environment. In fact, the contribution of space-based technologies and space-derived information to the observation and prediction of environmental changes plays an important role in the fight against climate change.

„We are at the forefront of innovation, technology and discovery and are committed not only to space missions, but also to ensuring that this journey is undertaken in a responsible and sustainable way.“

As the space market grows and the number of satellites in weekly launches is set to double, our commitment to sustainable operations and innovations such as reusable payload fairings is more important than ever for the long-term health of our planet.

We see sustainability not only as an obligation, but also as an opportunity to become more competitive, develop innovative products and services, and expand into new markets and revenue streams.

At Beyond Gravity, we believe in a comprehensive view of sustainability that combines environmental protection, social commitment, and responsible governance for a well-rounded impact. Our first Sustainability Report takes this holistic view into account.

I want to express my gratitude to our customers, partners and the entire space community for joining us on this journey, and of course to the incredible team at Beyond Gravity. Together, we will tap into the power of human ingenuity to drive sustainable solutions that benefit humanity and our planet.

Yours sincerely,



André Wall  
CEO Beyond Gravity





# Introduction.

In an era marked by growing environmental concerns and a need for responsible practices, Beyond Gravity is embarking on a journey towards a sustainable future. Given the undeniable urgency to address climate change and reduce greenhouse gas emissions, we want to align our mission with global sustainability goals.

We recognize that our efforts have an environmental footprint, and we are committed to minimizing, mitigating and ultimately eliminating the negative impact of our activities. This roadmap to net zero outlines our initial strategy to achieve a net zero footprint within our own operations by 2026.

It provides an overview of our current greenhouse gas emissions, the actions we are taking to reduce them, and our plans to offset the remaining emissions. It reflects the result of intensive internal discussion and analysis, as well as close collaboration with experts, all aimed at reducing our carbon footprint.

We firmly believe that our path to net zero emissions is not just a technical endeavor – it is the beginning of a cultural shift, a rethin-

king of how we operate, innovate and grow, putting sustainability at the center of our decision-making processes. With our efforts, we also hope to inspire positive change across our industry and invite our customers and partners to join us on this journey of transformation.

Our approach is based on the following key principles:

1. **Transparency:** Accurately measuring and reporting our greenhouse gas emissions.
  2. **Green energy:** Using renewable technologies that minimize emissions throughout our operations.
  3. **Collaboration:** Partnering with external stakeholders to enhance our capabilities and learn from best practices.
  4. **Adaptability:** Continually updating this initial strategy based on global best practices to progressively cover all our emissions.
- The future of space exploration and the future of Earth are inextrica-

bly linked. This roadmap is our pledge to navigate both of these challenges responsibly, ensuring that as we reach for the stars, we are grounded in sustainable practices that protect our home planet.

In the pages that follow, we will outline the details of our roadmap to net zero, including our current emissions, our initial targets, and the actions that will get us there.

„Our path to net zero emissions is not just a technical endeavor – it is commitment and the beginning of a cultural shift.“

*André Wall*



# Understanding our corporate carbon footprint.

For our near-term targets in the coming three years, we will focus on reducing the GHG emissions **within our own operations**, referred to as Scope 1 and Scope 2 emissions.

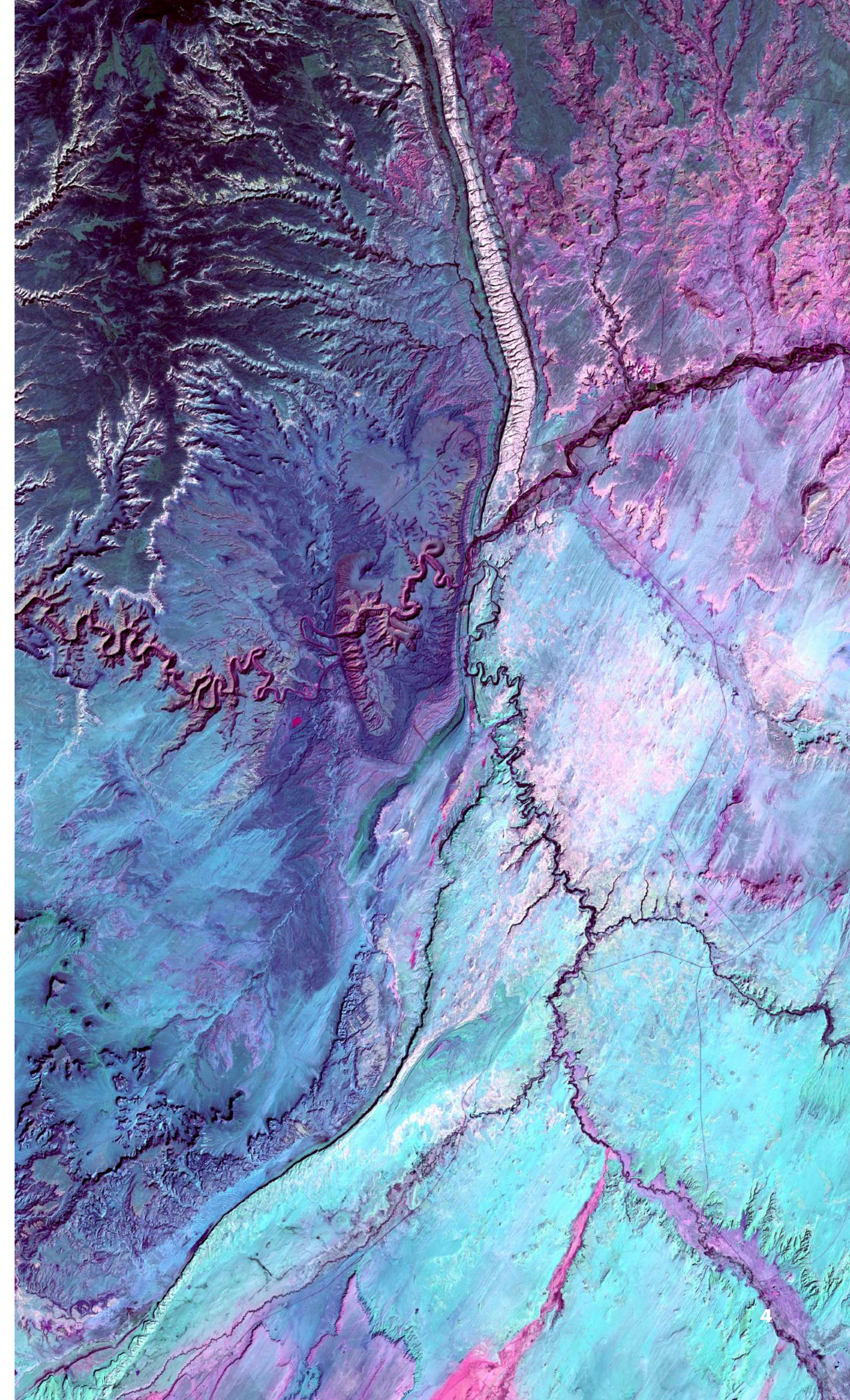
**Scope 1** includes emissions that are directly emitted at our facilities and by our company vehicles. **Scope 2** refers to indirect emissions generated through purchased electricity, steam, heating and cooling for our own use. With a few exceptions for some of our new facilities, we use the market-based rather than the location-based approach to calculate and report Scope 2 emissions related to our electricity consumption. The **market-based approach** shows the emissions for which we are responsible through our purchasing decisions.

**Scope 3** comprises indirect upstream and downstream emissions across the value chain outside of our own operations, such as from purchased goods or transportation.

**Greenhouse gases (GHGs)** are gases in the Earth's atmosphere that trap heat and raise the planet's surface temperature. Carbon dioxide (CO<sub>2</sub>) is the most prominent but only one of several other GHGs, such as methane.

All GHGs are included in the calculation of our footprint. To facilitate comparison of their global warming potential, they are expressed as absolute **carbon dioxide equivalents (CO<sub>2</sub>-eq)** by converting their impact levels to the equivalent amount of CO<sub>2</sub>.

The year **2023 serves as the baseline** for the calculation of our decarbonization targets for the period from 2024 to 2026. We calculated our footprint and defined the baseline and our targets based on the "Science-based Targets" standard in partnership with LRQA, an external consultant.







# Our CO<sub>2</sub>-eq footprint

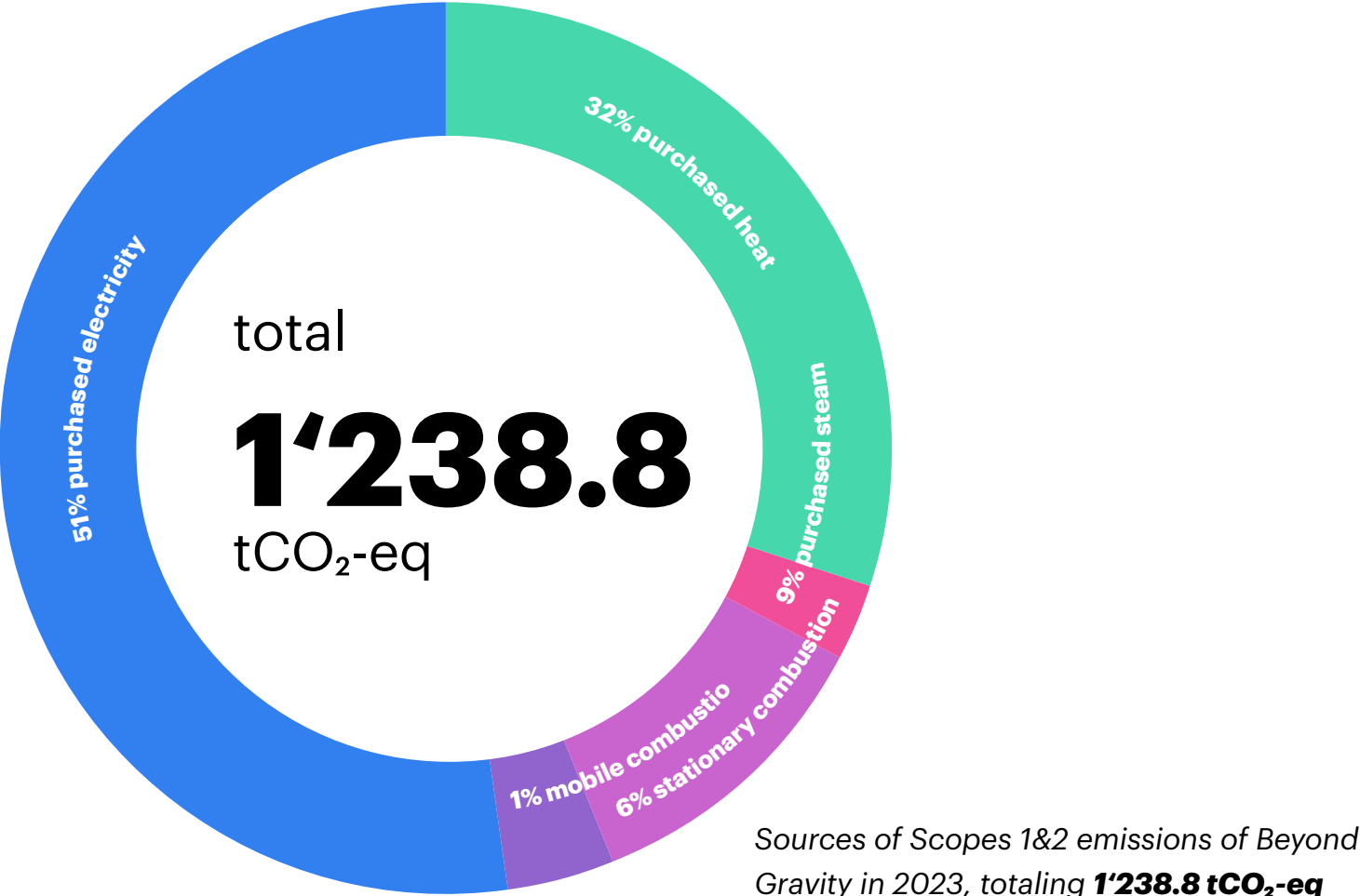
We estimate that our total annual greenhouse gas emissions across all scopes amounted to approximately **69’860** tonnes of CO<sub>2</sub>-eq (tCO<sub>2</sub>-eq) in 2023.

Our **Scope 1** emissions result primarily from the combustion of natural gas at some of our sites and from the fuel used by company cars.

Our **Scope 2** emissions result from electricity consumption and long-distance heating at our sites. Together, these emissions totaled approximately **1’238.8 tCO<sub>2</sub>-eq** in 2023.

While these emissions are much smaller than indirect Scope 3 emissions, they represent the portion for which we are directly responsible and can immediately influence and reduce.

| Scope 1 and 2 within our operations<br>tonnes of CO <sub>2</sub> -eq, in 2023                                     |         |  |
|---|---------|--|
| Scope 1   |         |  |
| Emitted directly<br>at our facilities and by our company vehicles<br>(e.g., on-site combustion and heating, fuel) | 92.9    |  |
| Scope 2   |         |  |
| Emitted indirectly<br>from the generation of purchased energy<br>(e.g., electricity and heating)                  | 1’145.9 |  |





Our upstream suppliers account for most of our **Scope 3** emissions. Reducing these would require strong decarbonization commitments from our industrial partners, but as a marginal buyer, Beyond Gravity has no leverage over these producers.

However, we support ambitious action to address climate change and will continue to work with others to reduce emissions that are not currently covered by our commitment.

**Beyond Gravity’s Scope 3 emissions**

Indirect emissions in our value chain in 2023; tonnes of CO<sub>2</sub>-eq

|   |                                    |
|---|------------------------------------|
| Purchased goods and services* / Capital goods             | <b>62’559</b>                      |
| Fuel and energy related activities                        | <b>172</b>                         |
| Upstream transportation                                   | <b>2’263</b>                       |
| Waste generated in operations                             | <b>139</b>                         |
| Business travel   | <b>1’179</b>                       |
| Employee commuting (without assumption of remote working) | <b>2’309</b>                       |
| <b>Total</b>  | <b>68’621</b> tCO <sub>2</sub> -eq |

*\* Of these, aluminum accounts for approximately 20% and carbon fiber for 8% of the total scope 3 emissions.*



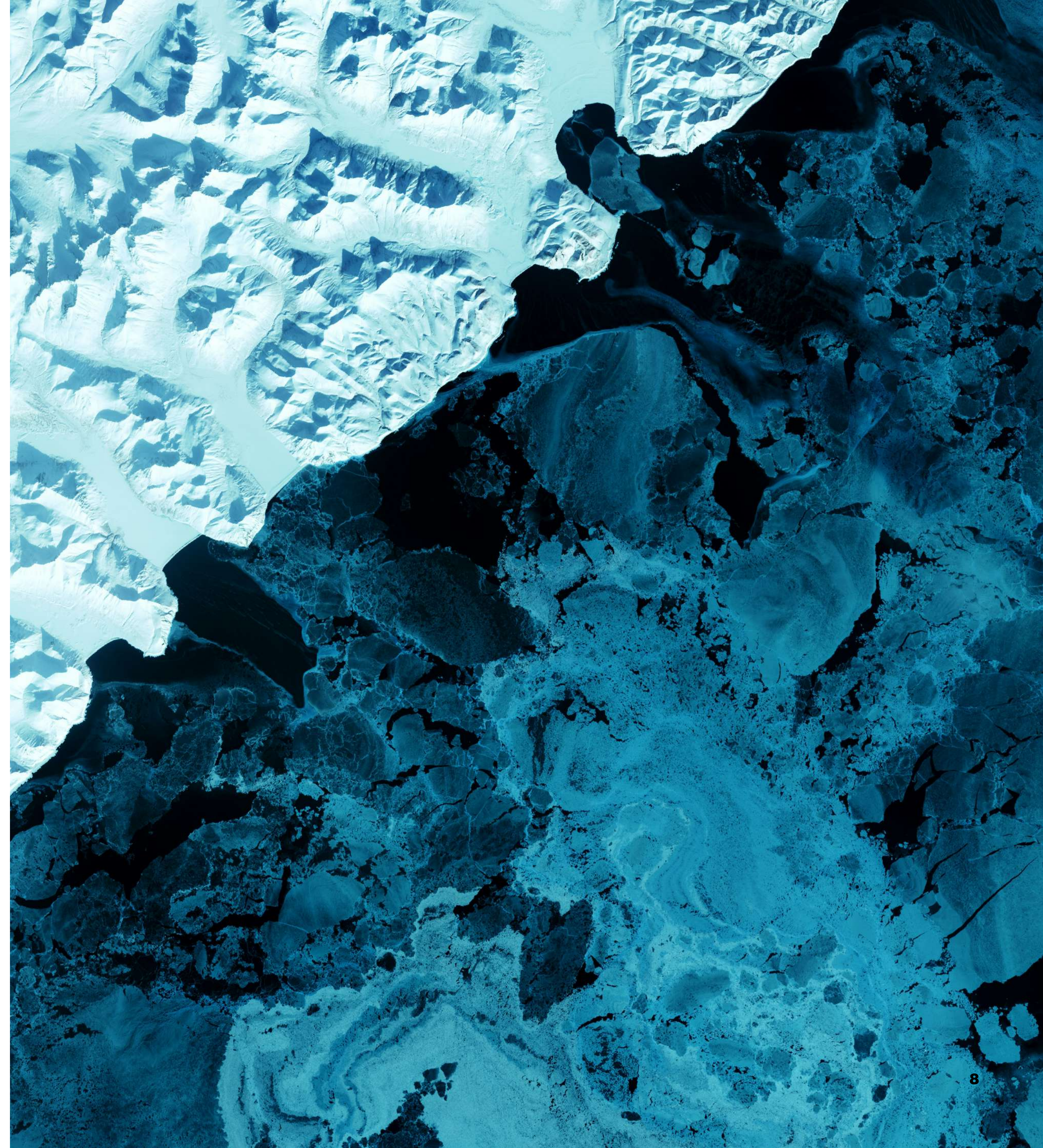
# Our roadmap.

Beyond Gravity commits to reduce its absolute Scope 1 and Scope 2 GHG emissions and reach net zero by 2026 from the base year of 2023.

Our first goal is the elimination of our Scope 1 and Scope 2 emissions from our own operations that are within our direct control and remediation.

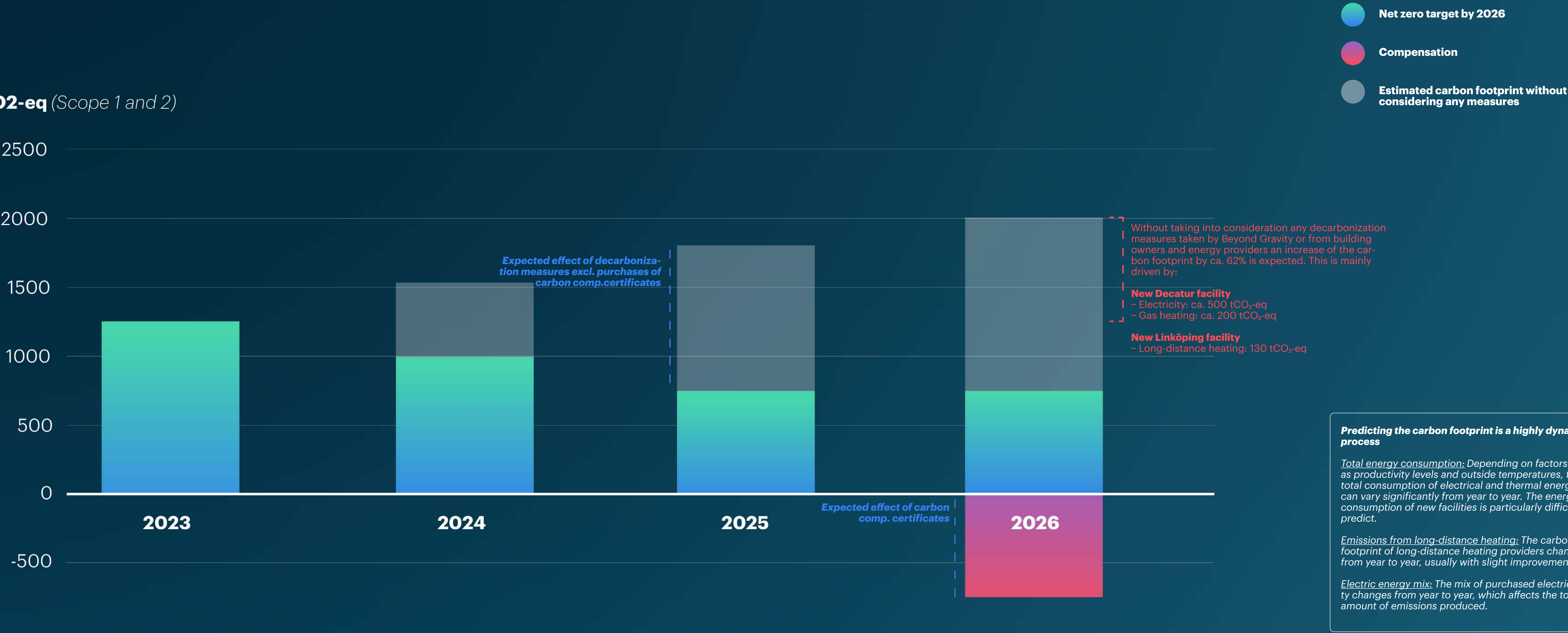
As our company grows over time, so do the emissions that we produce. Without the actions we are taking, our global Scopes 1 and 2 carbon footprint would increase significantly by an estimated 62% by 2026, mainly due to the opening of new facilities in the US and Sweden.

We are also actively addressing several segments of our up- and downstream Scope 3 emissions (see last section). However, as a company at the beginning of its net zero journey, we aren't currently setting corresponding reduction targets to focus our efforts through 2026 on eliminating our Scope 1 and 2 emissions over which we have direct control and can set ambitious near-term targets.





tCO2-eq (Scope 1 and 2)





# Our actions.

**At Beyond Gravity, we are committed to preserving the environment for future generations. Our decarbonization roadmap outlines a series of actions designed to provide a pathway that focuses primarily on eliminating emissions.**

Beyond Gravity’s approach to eliminating its Scopes 1 and 2 emissions until 2026 has four main pillars. Our primary goal is to gradually replace fossil fuel energy sources with electric equivalents and to meet all our energy needs from renewable sources at all our sites – including on-site energy generation, purchasing green energy and replacing our company cars with electric vehicles. By switching to renewable energy tariffs, Beyond Gravity is not only reducing its carbon footprint but also supporting a wider transition to green energy.

Further emission reductions will be achieved by optimizing our energy consumption. This includes measures such as improving protect climate zones with improved door opening mechanisms and practises, using LED lighting systems, or recalibrating heating and cooling systems. The efficient use of energy by our employees also makes a significant contribution to reducing overall energy requirements. Through internal communications and on-site training, Beyond Gravity raises awareness among employees.

Like any manufacturing company, we will not be able to completely eliminate all emissions from our own operations. As a measure of last resort to neutralize residual emissions, we will support projects that reduce greenhouse gas emissions or remove carbon from the atmosphere through the purchase of carbon compensation certificates. However, we are committed to using this tool only when all other options have been exhausted.



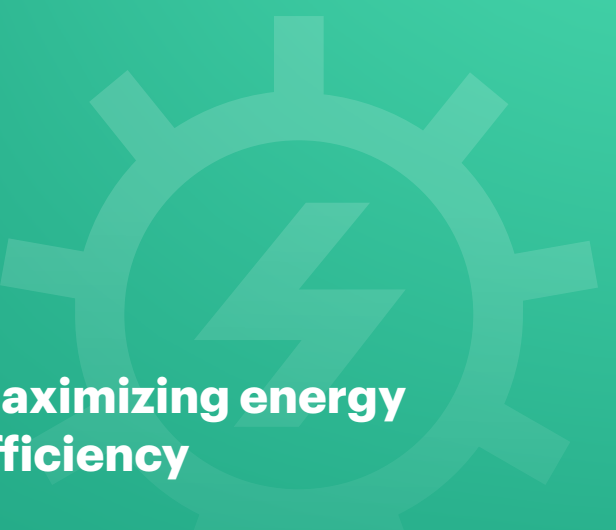
### Decarbonizing electricity

Switching to renewable energy sources, either through on-site generation or the procurement of green energy.



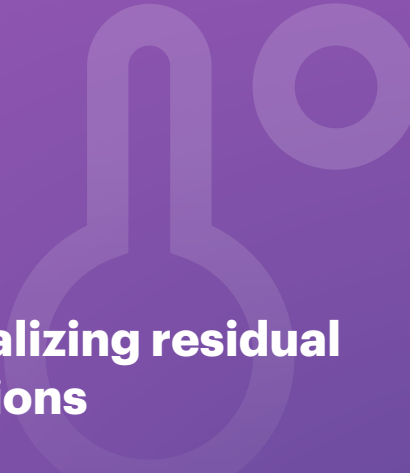
### Green heating solutions

Replacing fossil fuel energy sources, such as gas heating, with renewable energy equivalents, such as heat pumps.



### Maximizing energy efficiency

Optimizing building infrastructure, systems and equipment to foster energy conservation.



### Neutralizing residual emissions

Supporting projects that mitigate GHG emissions or remove carbon from the atmosphere.

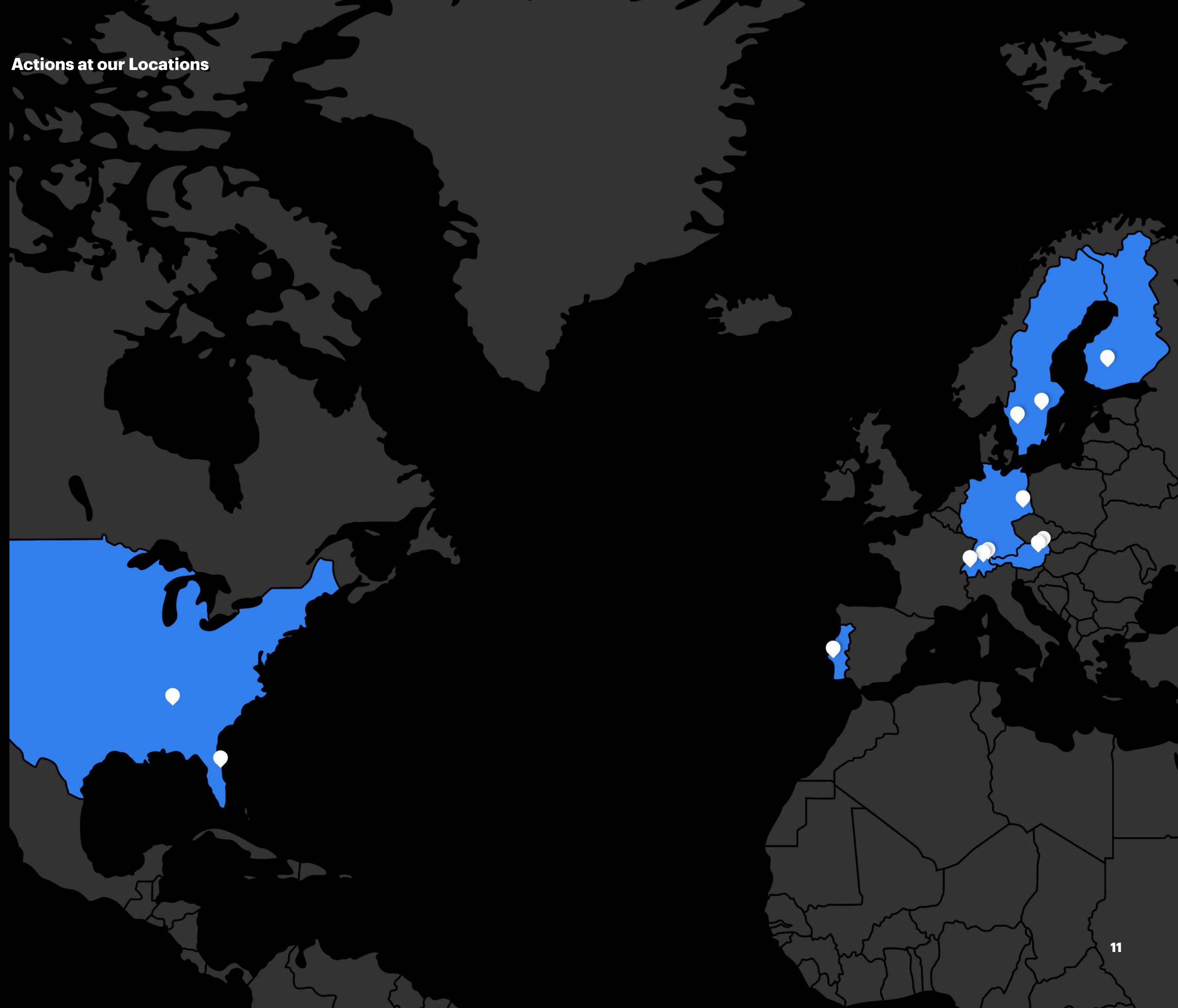


# Actions at our locations.

**Beyond Gravity is taking various measures at its manufacturing sites and office locations around the globe to gradually reduce and eliminate its GHG emissions from electricity consumption and heating.**

Around 1'800 employees at 14 sites in seven countries (Switzerland, Sweden, Austria, Germany, USA, Finland, and Portugal) develop and manufacture products for satellites, launch vehicles and the semi-conductor industry with the goal of advancing humankind.

In 2023, energy consumption from these sites accumulated to approximately 1'238.8 tCO<sub>2</sub>-eq of Scope 1 and 2 emissions.







# Green power switch.

At the following manufacturing sites, we will transition to an electricity supply from 100% renewable energy sources by purchasing green power.

## Decatur USA

Our modern production facility in Decatur manufactures launcher structures for our U.S. customers. A new production hall will go into operation in 2024. Our carbon footprint would therefore increase without the actions we are taking. Along with the growing energy need of our site in Decatur we are transitioning to 100% green electricity\* through a mix of wind and solar energy, reducing our carbon footprint by an estimated **839.6 tCO<sub>2</sub>-eq** from 2025.

## Titusville USA

Titusville is the home of our semi-automated satellite panel manufacturing operations with a focus on the growing satellite constellation market. In 2025, we will switch to all wind and solar power.\* This will completely eliminate the **138.5 tCO<sub>2</sub>-eq** that we indirectly emit each year.

## Coswig Germany

Coswig is our center of excellence for precision electromechanical systems for satellites and non-space applications, as well as for the design of microelectronics for navigation and telecommunications purposes. The plant contributes significantly to our global footprint with a poor energy mix including brown coal. By switching to a green electricity tariff in 2024, we will eliminate our corresponding emissions of **69.1 tCO<sub>2</sub>-eq** per year.

\* Renewable Energy Certificates (RECs), is a market-based instrument in the US that certifies ownership of one megawatt-hour of electricity generated from a renewable energy source.



# Green heating solutions.

We plan to replace fossil fuel heating sources with electrically powered renewable equivalents at the locations below by 2026.

## Vienna Austria

Our Vienna facility is a market leader in high-performance satellite navigation receivers and space electronics, and is home to thermal insulation engineering for satellites and launch vehicles around the world. It is also a leading supplier of electric propulsion pointing mechanisms, satellite transport containers and other mechanical ground support equipment. By 2024, we will replace the current natural gas heating system with an electric boiler. This will result in an estimated reduction of **47.7 tCO<sub>2</sub>-eq** per year. Despite the high cost per tonne of CO<sub>2</sub> reduced and our status as tenants rather than owners, we are determined to implement these changes in light of our commitment to net zero emissions.

## Coswig Germany

In addition to switching to green electricity, we will replace our current heating solution in Coswig with a heat pump or pellet heating system in 2025 to eliminate its **30.9 tCO<sub>2</sub>-eq** footprint. Despite the high cost per tonne of CO<sub>2</sub> reduced and our status as tenants rather than owners, we are determined to implement these changes in light of our commitment to net zero emissions.

## Nyon Switzerland (Optional measure)

Our engineering and manufacturing team for custom sliprings and high precision electro-mechanical systems for satellites is located in Nyon. The heating system is currently powered by natural gas. A switch is a possible option for Beyond Gravity in the future to further reduce our greenhouse gas emissions by **28 tCO<sub>2</sub>-eq**.



# Green building infrastructure.

By moving into modern offices and production buildings at the following locations, we are switching to fully renewable energy for heating and electricity while maximizing energy efficiency.



## Zurich Switzerland

Zurich is our global company headquarters, including development and manufacturing facilities for mechatronics, satellite structures and non-space applications. By moving to a new office building powered by renewable electricity and equipped with a zero-emission heat pump, we are reducing our carbon footprint compared to our previous long-distance heating supplier by an estimated **40 tCO<sub>2</sub>-eq** per year until 2026.

## Linköping Sweden

Our branch in Linköping is a global leader in the engineering and construction of satellite dispensers and separation systems for all major launch vehicles worldwide. In 2024, we will gradually bring a new production facility into operation, with full productivity expected in 2025. The new building will be equipped with a maximum capacity rooftop solar installation of 699'488 kWh/year. The location-based comparison with the existing electricity results in a maximum reduction of **10.8 tCO<sub>2</sub>-eq** per year from 2025.

## Lisbon Portugal

Our newest site in Lisbon serves as our Innovation & Digital Hub with talented engineers and IT professionals and will grow from 50 to around 200 employees in the coming year. The new office, which will open in fall 2024, will be emissions-free from day one, saving approximately **85.7 tCO<sub>2</sub>-eq** from 2026 according to the location-based approach.



# Sustainable partnerships.

In partnership with the owners of the facilities listed below, we are making the transition to heating solutions powered by renewable energy sources.

## Emmen Switzerland

Emmen is our competence center and production facility for lean, innovative manufacturing of launcher structures for European and Asian launch vehicles. With the transition of our heating gas supply to an external long-distance heating solution with higher process efficiency, our CO<sub>2</sub> footprint from natural gas consumption will be lowered by approximately **90 tCO<sub>2</sub>-eq** per year by 2024.

## Tampere Finland

Our state-of-the-art manufacturing, engineering and test facility in Tampere offers world-renowned expertise in satellite interface and power electronics. By the end of 2024, our long-distance heating supplier will be emissions-free, reducing our estimated carbon footprint by **6.7 tCO<sub>2</sub>** from 2025. The plant already uses electricity generated from entirely green energy sources.

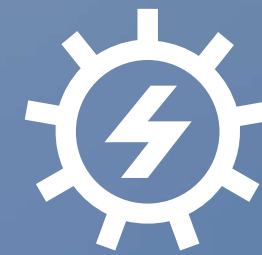


# Past actions at our sites.

At several of our sites, we have taken steps before our 2023 base year to electrify energy consumption by replacing fossil fuel energy sources with electric equivalents, to switch to renewable energy sources, and to maximize energy efficiency. Emissions reductions from these earlier actions do not count towards our 2026 reduction targets.



At our sites in Switzerland, Austria and Finland, we have completed the transition to an electricity supply from 100% renewable energy sources. The same applies to one of our largest facilities in Gothenburg, Sweden, our competence center for mechatronics and high-reliability electronic products for satellites and launch vehicles, including guidance systems and on-board computers for spacecraft control.



We have implemented various energy-saving measures at all our locations, including the technical optimization of plants and their control, the adaptation of production processes, such as their electrification, the improvement of thermal insulation and the recalibration of heating and cooling systems, or the replacement of equipment, such as the conversion to LED lighting.



Through internal communication we continuously raise awareness among our employees about environmentally friendly behavior, such as turning off appliances and closing windows at the end of the day, or consciously using air conditioners and heaters in offices and meeting rooms.



We have gradually expanded electromobility by replacing our company car fleet with electric vehicles and installing electric charging stations, and we will continue to do so.



# Compensation.

Beyond Gravity’s first priority is the reduction of GHG emissions from our own operations. As a manufacturing company, however, we will not be able to completely eliminate all emissions that come from our activities. To neutralize our Scopes 1 and 2 residual emissions, we will support projects that reduce GHG emissions or remove carbon from the atmosphere.



**Climate compensation**

We currently estimate that from 2026 onwards, we will purchase carbon offset certificates to financially support greenhouse gas avoidance or mitigation projects in the order of **743.8 tCO<sub>2</sub>-eq** per year.





# At a glance.

|                  | Project   | 2026                      |
|------------------|---|---------------------------|
| Locations        |   | CO <sub>2</sub> reduction |
| Tampere          | Long-distance heating supplier to become emissions-free   | 6.7                       |
| Emmen            | Switching from gas to emissions-free long-distance heating  | 90.0                      |
| Titusville       | Switching to a 100% green electricity tariff  | 138.5                     |
| Decatur          | Switching to a 100% green electricity tariff  | 839.6                     |
| Coswig           | <ul style="list-style-type: none"><li>Switching to a 100% green electricity tariff</li><li>Switching long-distance heating to a 100% emissions-free heat pump</li></ul> | 69.1<br>30.9              |
| Nyon*            | Switching from natural gas to biogas heating  | (28.0)                    |
| Vienna           | Switching from natural gas to electric boiler   | 47.7                      |
| Zurich           | New office building powered by renewable electricity and a zero-emission heat pump  | 40.0                      |
| Linköping*       | New building powered by renewable energy for heating and electricity  | (10.8)                    |
| Lisbon*          | New building powered by renewable energy for heating and electricity  | (85.7)                    |
| Huntsville       | Closing of entire site  | 62.5                      |
| Worldwide        | Carbon offset certificates  | 743.8                     |
| Total reductions |   | 1325**                    |

\*The reduction measures shown of these sites do not directly reduce current emissions or are not part of the fixed roadmap and have therefore not been included in the total reduction sum.

\*\*Estimated tCO<sub>2</sub> saved in 2026 is higher than the entire footprint of 2023. This is due to the estimated increase of our entire emissions over the next years and without carbon compensation measures.



Introduction

Footprint

# Our Scope 3 engagement.

Actions at our Locations

## Easier recovery and reuse of payload fairings.

A substantial portion of our business involves the design and production of payload fairings for various launch vehicles on missions around the world. Given the expected significant increase in rocket launches in the coming years and the need to reduce the space industry's environmental footprint, we are working to provide our customers with the technology to locate and recover our payload fairings, including a way to catch them on the fly while falling, thus avoiding the splashdown in the ocean.

Furthermore, our engineers are exploring options for a reusable fairing that could return to Earth with the first stage of the rocket, significantly reducing costs and the use of carbon-intensive raw materials.

## Making the workplace more flexible.

We motivate and incentivize employees to use public transport to get to work, reduce business trips, favor rail over air travel whenever possible, and allow people to work from home when and where it makes sense. With the new office set-up in Zurich we started a new pilot where employees receive public transportation subscriptions from Beyond Gravity.

## Conscious use of goods – less waste, more recycling.

By decreasing unnecessary waste especially in the fields of packaging practices with our suppliers we can decrease the generated Scope 3 green house gas emissions from transportation.





## Responsible sourcing and supplier commitment.

By far the largest part of our carbon footprint is indirectly caused by our supply chain. That is why we will closely monitor and evaluate our suppliers and engage with them on shared CO<sub>2</sub> reduction targets. A software-based solution to monitor and assess performance data from our suppliers.

In 2024 we started with a pilot project to collaborate with suppliers on the reduction of their global greenhouse-gas emissions. In our selection process, reduction of CO<sub>2</sub> emission can be a competitive advantage.

## Product carbon footprint.

The product carbon footprint provides information on the total GHG emissions of a product over its entire life cycle. As our first project, we plan to calculate and document the environmental impact of our thermal foils, which protect satellites from extreme heat and cold in space. Based on the ISO 14067 standard, we will consider everything from the extraction and production of raw materials and goods to the energy required to manufacture the product, to logistics and delivery to the end customer.

Each of these steps in a product's life cycle allows us to identify opportunities for improvement and compare options, such as alternative production methods or component sourcing.



