

SUSTAINABILITY

Understanding the Environmental Impact of Gii

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Section 1:

Our Vision

Our Vision

iGii was founded on the belief that 2D materials can and should contribute to sustainable development. From the beginning, the goal was to build a company that used material science to improve lives and reduce environmental impact whilst aligning with the principles of the UN Sustainable Development Goals.

The founding team recognised that existing graphene processes were not fit for the future. Incremental improvements would not be enough to meet growing commercial and sustainability demands. iGii set out to develop a fundamentally different manufacturing process that could unlock the full potential of 2D materials in real-world applications.

This approach led to the invention of revolutionary new material Gii, a pure, porous, 3D carbon nanomaterial that can replace noble metals, screen printed carbon and graphene across all industries. It is manufactured using only a substrate and electricity, with no mined heavy metal inputs, toxic chemicals or refining. This design choice reduces supply chain risk and supports the transition to net zero, with the potential to run on 100% renewable electricity.

iGii's current focus is on providing materials to support better health outcomes, through its development of the first multi-analyte point of care sensing platform. The material is also designed to extend into other sectors where high-performance sensing and sustainable materials are needed.

From the start, iGii has focused on solving hard problems with long-term impact. That commitment remains central as we continue to invest in scalable technologies that support both commercial performance and the UN Sustainable Development goals.

Section 2:

Our Material



Our Material

Gii is a carbon nanomaterial developed to overcome the limitations of legacy alternatives. It replaces noble metals, screen-printed carbon, and graphene with a more cost effective, stable, scalable, and sustainable option. Designed for real-world performance, Gii combines high surface area, electrochemical stability, and consistent structure to support demanding applications across industries.



The material is produced without noble metals, chemical treatments, or complex refining. Its manufacturing process uses only a substrate and electricity removing many of the environmental and supply chain risks associated with traditional materials.

Because of its consistent structure and stability, Gii delivers highly reproducible results. This reduces batch-to-batch variation, lowers material waste, and improves reliability in scaled production. It has also been designed to be grown and customisable, enabling formulations to be adapted quickly and efficiently as requirements change.

These characteristics have opened up opportunities in areas where legacy materials struggle. Gii has already shown its ability to reduce the number of components needed in products, simplify device architectures, and lower packaging requirements, particularly in disposable and decentralised formats.

From the outset, Gii was developed not just to perform better, but to enable a more sustainable, flexible and cost effective approach to materials integration. It is already supporting partners in the transition to cleaner, more resilient manufacturing models.



The power of Gii



The background of the page features a complex, abstract network diagram. It consists of numerous small, dark grey circular nodes connected by thin, light grey lines. The nodes are distributed across the page, with a higher concentration on the left side, creating a sense of depth and connectivity. The overall aesthetic is modern and technological.

Section 3:

A More Sustainable Alternative

A More Sustainable Alternative

Gii's sustainability advantage is built into its structure, its process, and its performance. By removing the need for mined noble metals and chemical refining, Gii avoids some of the most environmentally and ethically challenging parts of traditional materials supply chains. It is produced with no prolonged high heat, toxic inputs, or complex waste streams.



Simplified process

This simplified process makes the material inherently more adaptable. Because Gii is grown and stable, formulations can be adjusted quickly and cleanly, reducing the time, energy and material waste typically involved in reformulation or redesign. This flexibility is particularly valuable in fast-moving or diagnostic applications, where material performance must evolve without environmental trade-offs.



High reproducibility

The high reproducibility of Gii's structure also contributes to sustainability. More consistent results mean less waste, fewer failed tests, and more efficient use of resources across the value chain. In client labs, this translates to lower volumes of discarded materials, such as plastics and more confidence in scaled production.



Efficiency

In many formats, Gii also enables more efficient product designs reducing the number of components required and lowering the amount of plastic and packaging needed. While packaging remains an area for further development, Gii already supports more material-efficient solutions than many legacy alternatives.



Low impact manufacturing

Crucially, Gii is not a one-off material, but a platform that supports decentralised, low-impact manufacturing. Its process is designed to scale without the footprint of traditional materials production enabling cleaner growth in sectors that depend on high-performance, low-burden components.



Electrically powered process

Gii is produced using a low-energy, electrically powered process designed to support sustainable manufacturing from the outset. Unlike conventional methods that rely on fossil fuels, mined metals or chemical processing, iGii's approach uses peak temperatures of just 400°C for a short period. This results in significantly lower energy consumption and a cleaner overall footprint.



100% renewable energy

Because the process is fully electric, it can be powered by 100% renewable electricity wherever that is available, aligning with the global transition to net zero. As industries electrify everything from transport to manufacturing, iGii's process is already fit for purpose.



Modular and scalable

It is also modular and scalable. Gii can be produced in centralised facilities, offering greater control, reduced distribution emissions, and substantially less electricity than other processes. This flexibility enables a more decentralised, efficient approach to advanced materials manufacturing - one that avoids the environmental burden of long, complex supply chains.

Section 4:

Our Process



Low-Energy, Clean Process

Gii is made using a low-energy, electrically powered process designed to minimise environmental impact. There are no mined metals, no toxic chemicals, and no refining involved. The result is a simpler, cleaner, and more sustainable approach to carbon nanomaterial production.

Renewable-Ready

Because the process is fully electric, it can be powered using 100 percent renewable electricity wherever that is available. As global manufacturing transitions to electrification, iGii's process is already aligned with that direction.

Modular & Scalable

It is also modular and scalable offering greater control, reduced distribution emissions, and substantially less electricity than other processes. This flexibility enables a more decentralised, efficient approach to advanced materials manufacturing - one that avoids the environmental burden of long, complex supply chains.

Resilient

By avoiding mined inputs and chemically intensive steps, the process offers greater resilience as well as lower impact. It scales easily from small R&D batches to high-volume production without altering the core method, making it flexible across use cases.

Built for Sustainability

This isn't a cleaner version of an existing process. It's a fundamentally different one, designed from the ground up for sustainability, scalability, and long-term relevance.



Section 5:

Our Impact

LCA

Understanding our impact early

In early 2025, iGii commissioned a full Life Cycle Assessment (LCA) to understand how its early-stage sensors compared to conventional devices from cradle to grave. At this point, the process had not yet benefited from scale, supply chain optimisation, or streamlined logistics yet the findings were clear. Even in its earliest form, Gii outperformed legacy materials on key environmental measures.

The study provided a vital baseline and highlighted areas of greatest impact. Since then, improvements have already been made, and we are confident that repeating the assessment today would show even greater gains. As we continue to scale, the environmental profile of our material and sensors will continue to improve. The LCA gave us evidence, direction, and the confidence to act.



Net Zero

An integral part of our journey

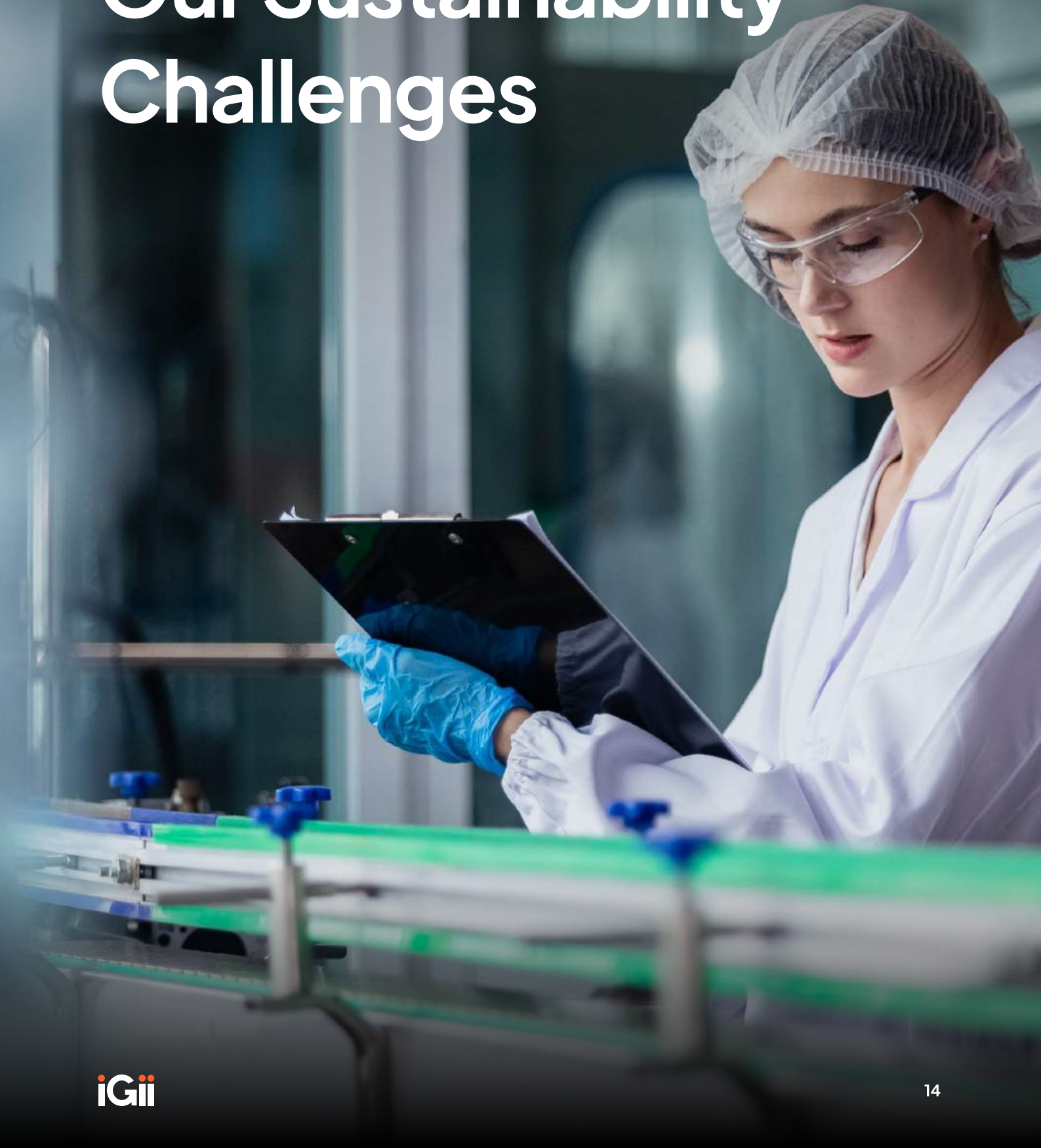
Sustainability has been part of iGii's governance from the start. Working with Scottish Enterprise, we developed an early Net Zero Plan. Our investors require us to report on progress and have played a key role in shaping how sustainability is embedded in the business. This ongoing scrutiny has helped ensure that as we scale, we do so with strong foundations already in place.

As a growing company, we are clear-eyed about the balance between operational reductions and broader impact. Our biggest contribution lies in developing a material that supports lower-impact manufacturing for others. We remain committed to credible reporting, evidence-led claims, and scaling technology that drives both environmental and healthcare benefits.



Section 6:

Our Sustainability Challenges



Our Sustainability Challenges

Sustainability is a core driver for iGii, and we have made meaningful progress by transforming how carbon nanomaterials are produced. Our process avoids mined metals, eliminates toxic chemicals, and runs on low energy. However, like any growing company, we face ongoing challenges particularly in areas where the industry as a whole is still catching up.

Two of our most material impacts today are the substrate and the packaging used in our sensors. Both are actively under review, and we are working to reduce their footprint over time.

01

Substrate

Gii is currently grown on a fossil-fuel-based substrate. This choice supports the performance and reproducibility of the material, but we recognise that it represents a non-renewable input in an otherwise clean process. Finding alternatives that meet our technical and operational requirements has been an area of development for us and we are making breakthroughs through our new Gii Resin. This will remain a priority as we scale.

02

Packaging in relation to the LCA

At this stage of production, our packaging impact is driven mainly by the fact that we ship in small, pre-commercial batches. To protect the material and maintain performance, we currently use plastic-based packaging, which ensures stability through handling and transport. As production scales to reel-to-reel manufacturing, the packaging profile will change completely. Reel-to-reel production allows large volumes to be wound and stored on compact reels, eliminating the need for most protective housings and significantly reducing material use. In full-scale operation, this approach has the potential to use less packaging than any comparable process in our sector, while still protecting product integrity.

Silver

While Gii itself is produced without mined inputs, iGii includes a minimal amount of silver in its Gii-Sens electrodes to maintain compatibility with industry-standard formats. This ensures seamless integration for partners and aligns with current sensing infrastructure. Recycled silver sources have been actively investigated to further reduce material impact, and iGii continues to assess opportunities to minimise footprint without compromising performance or compatibility.

We are also aware that these challenges are not unique to us; they are systemic across much of the advanced materials and diagnostics sectors. But we take our responsibility seriously. We are transparent about where improvements are still needed, and we are building a sustainability strategy that will inform our journey forward. We are committed to continuous improvement, and we are building a platform that has the potential to deliver significantly lower environmental impacts than any comparable alternative. These challenges do not undermine the value of what has been developed. Instead, they help shape where we go next.

Committed to a sustainable future

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Our Commitment

iGii was founded to prove that advanced materials can be both high-performing and low-impact. We've built a new class of carbon nanomaterial, delivered through a fundamentally cleaner process, and proven its potential in the most demanding real-world applications.

As we scale, that founding vision stays a core pillar of our strategy. Sustainability isn't a layer we add, it's woven into who we are, and the lens through which we will continue to pursue growth.

Jean-Christophe Granier

CEO



Founded with purpose, committed to sustainability.

iGii was created to make a meaningful contribution to sustainable development from day one. The company was created to be a sustainable advanced materials business that uses science to improve lives and deliver cleaner, smarter technologies.

Ready to see what's possible? Contact us to explore more technical specifications or speak with our team about integrating Gii into your next digital biosensor innovation.

[Get in touch today](#)

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