



THE POWER TO TRANSFORM

Helping to Create a More Sustainable World

2022 Sustainability Report



IPG Photonics



the power to transform.

IPG PHOTONICS at a Glance

IPG Photonics is the world leader in fiber laser technology, enabling greater precision, higher productivity and more flexible production for industrial applications and other diverse end markets. IPG fiber laser solutions transform the products that touch your life. Our global customers include original equipment manufacturers, system integrators and end users.

IPG has developed a robust, vertically integrated supply chain producing key technology components in-house, enabling the most reliable, powerful and efficient laser solutions and rapidly reducing costs.

Oxford, Massachusetts is home to IPG world headquarters. We have additional manufacturing facilities and offices in more than 30 locations around the world.

IPGPhotonics.com
[IPG Investor Resource](#)

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A message from our CEO

Dear Stakeholders,

I am very pleased to introduce IPG's 2022 Sustainability Report. We are proud to share our accomplishments in environmental, social, and corporate governance as well as our vision and plans on how to reach sustainability goals and expectations.

We remain focused on expanding our energy efficiency strategy by decreasing our energy consumption, reducing our environmental footprint and supporting our customers' sustainability goals. IPG's unique technologies, deep technical expertise and focus on quality are transforming the way products are created in a number of industries. For example, IPG's breakthrough solutions address challenges and safety concerns in the manufacturing of batteries for electric vehicles and improve solar cell efficiency. Our products also drive efficiency and productivity, making our fiber laser technology the tool of choice in many different markets. Environmental impact is becoming a key consideration for an increasing number of customers. Our fiber laser cutting and welding solutions can substantially reduce energy use and eliminate harmful fumes compared to plasma process. IPG's laser-based cleaning solutions can reduce toxic waste by eliminating the use of chemicals. Customers' focus on sustainability and efficiency is driving an increased demand for our ECO lasers that provide wall-plug efficiency of greater than 50%, impressive even by highly efficient fiber laser standards, and can help meaningfully reduce the environmental impact and energy costs for medium and large industrial manufacturers. These lasers also generate less heat thereby reducing cooling needs, further decreasing energy and water use in manufacturing. We remain committed to our focus on innovation and are further aligning our R&D, market development, sales and technical support functions to address environmental challenges.

IPG has been a strong supporter of social inclusion practices since its inception, employing a large number of people born outside of the U.S. and Western Europe. We believe that an engaged, diverse, and inclusive workforce creates a better future for our company and the communities in which we operate. We have improved diversity at IPG's Board of Directors by adding three female directors since January 2021. Further, we established a Diversity, Equity and Inclusion Charter and committee at IPG as we strive to enhance diversity and inclusion not only at the Board level, but throughout the organization. Our employees are our most valuable asset and our finest innovations are a direct result of their collaboration and unique backgrounds. We enhanced the visibility of our job opportunities via the CIRCAWORKS program for women, minorities, older workers, individuals with disabilities, veterans, and LGBTQIA applicants. More than a third of our 2021 Engineering and Professional Internship Program consisted of minority women and five interns were sponsored through INROADS, a non-profit organization that creates pathways to careers for ethnically diverse high school and college students across the country.

Our organization values transparency and we continue to improve our corporate governance and further align the interests of all of our stakeholders. We conducted our first materiality assessment in 2021 and are pleased to discuss the findings in this report. In May 2021, we separated the board chair and CEO roles and appointed our first non-executive Chair of the Board in October.

We appreciate all of our stakeholders and are committed to enhancing our sustainability initiatives. We are making great strides towards a more sustainable future through our focus on innovation and energy efficient technologies that continue to enable revolutionary new products that benefit society and the environment.

Dr. Eugene A. Scherbakov

CEO

April 2022

2021 SNAPSHOT



\$1.5 Billion
REVENUE



51,000
DEVICES SHIPPED



~7,000
EMPLOYEES



4,000+
CUSTOMERS

Our Values

We are committed to providing our customers with laser solutions that are industry-leading in their performance, quality and efficiency.

IPG operates around our three central pillars of corporate ethics: environment, governance and communities. IPG values our diverse and highly talented employees who allow us to develop new solutions and provide the best possible service to our global customer base.

IPG is committed to being accountable and transparent when interacting with our customers, employees, suppliers and stockholders. We are dedicated to supporting local organizations and conducting business with the highest integrity.

Our Purpose

IPG products are disrupting the market by empowering tomorrow's applications today.

IPG is revolutionizing the laser industry as the pioneering developer and leading producer of fiber lasers and amplifiers. Our mission is to make fiber laser technology the tool of choice in mass production. Our products have displaced traditional technologies and are creating new laser applications. Our vertical integration approach to product manufacturing means that we produce most of the critical components that go into our lasers, enabling IPG to better meet customer requirements, accelerate product development, drive down costs and dramatically lower our carbon footprint.



1990
FOUNDED



Nasdaq IPGP
STOCK TICKER



Oxford, MA
HEADQUARTERS



20+
COUNTRIES

Our Operations

DRIVING INNOVATION

Our high power fiber lasers enable greater precision, high speed processing, more flexible production methods and improved throughput. IPG fiber lasers provide superior performance and usability by combining the advantages of semiconductor diodes with high amplification and precise beam qualities delivered through our unique optical fibers.

IPG has the broadest portfolio of fiber lasers that are industry-leading in their compactness, reliability, and low service cost. IPG has three main manufacturing facilities and more than 30 locations around the world. Our vertical integration business model, material processing expertise and 600 plus patents enable superior quality and competitive advantages.



ENVIRONMENTAL IMPACT AND RECYCLING

IPG pioneered high power fiber lasers for industrial applications. Fiber lasers are 5 to 20 times more energy efficient than other laser technologies such as CO₂ or Nd:YAG lasers and can often improve process speeds which compounds customer energy savings. IPG supports the modern industrial era by manufacturing energy-efficient products that require less power from fossil fuels. Unlike gas and crystal lasers, the entirely solid-state optical architectures of our novel fiber lasers do not require consumables, such as gases, lamps and optical components. We warrant most lasers for three years. As industrial equipment, the useful lives of our products are longer than the warranty, in many cases up to ten years. We also provide service and maintenance to extend the lives of our products and prevent them from going to landfills due to our recycling programs.

IPG provides incentives for customers to return non-functioning pump modules, which contain packaged laser diodes and other optical components in a metal housing. We repair, refurbish or recycle pump modules depending upon their age and condition. IPG developed an extensive metal recovery program to reclaim a variety of materials and precious metals during our production process. Every year, IPG saves thousands of tons of materials including aluminum, copper, steel and mixed brass.

VERTICAL INTEGRATION REDUCING ENVIRONMENTAL IMPACTS

At IPG, we manufacture the most critical components of our products in-house. These include advanced opto-electronic items ranging from semiconductor diodes, specialty optical fiber and components, fiber blocks, optical delivery cables, beam switches, process heads and circuit boards, to mechanical parts such as metal cabinets and heat sinks for our pump modules and electrical items like power supplies. Our vertical integration produces substantial environmental benefits because our in-house supply chain reduces packaging usage and related waste as well as transportation emissions as compared to most other companies which source a substantial majority of components from remote third-party suppliers.

Our Planet

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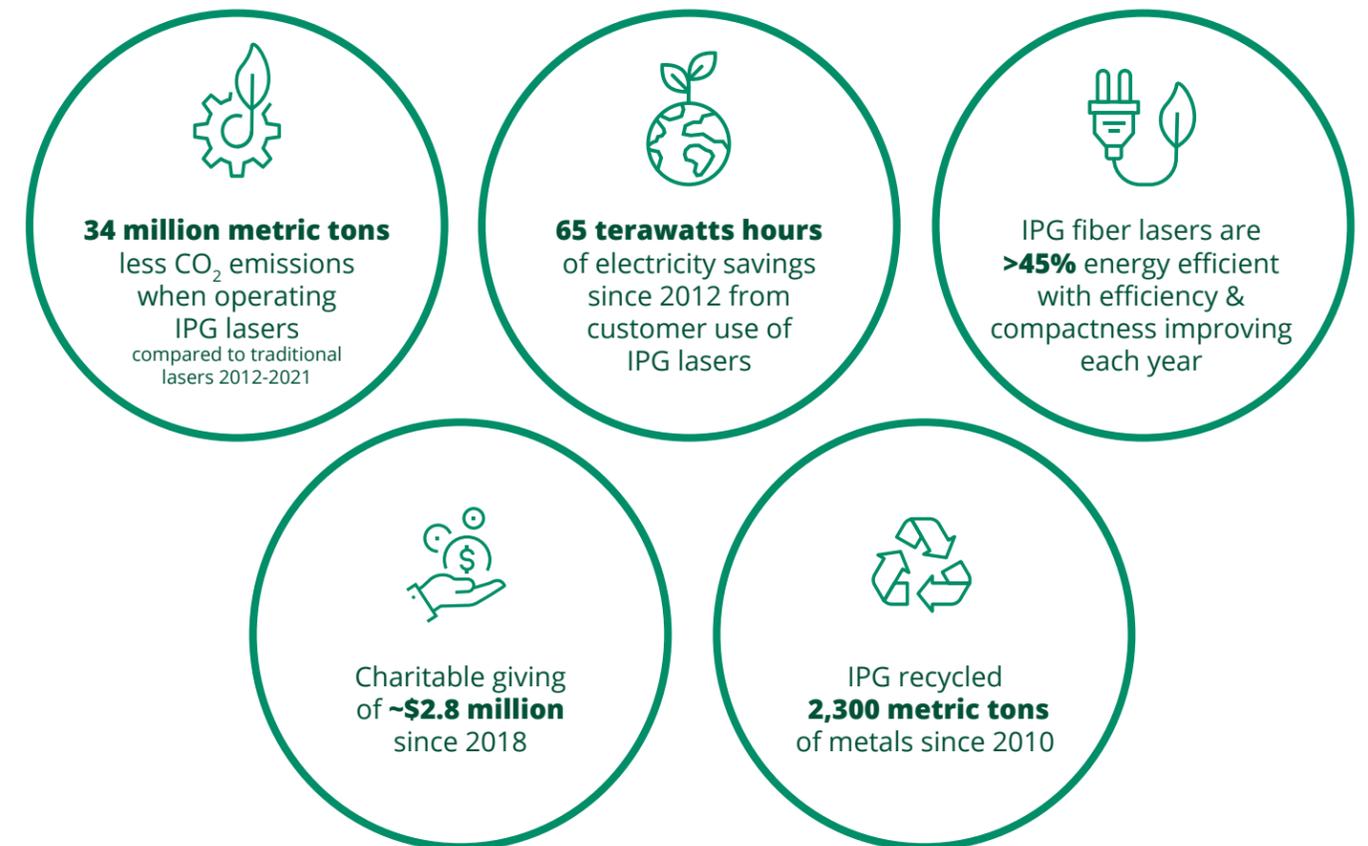
Sustainability Vision

IPG values innovation, accountability and transparency, which is why we continually strive to advance our sustainability strategy to align with the fundamental principles of our stakeholders and local communities.

We integrate safety, reliability and sustainability fundamentals within our operations and product development initiatives. It is our responsibility to utilize our unique innovation capabilities in response to societal and environmental challenges.



IPG is a proud supporter of the United Nation's Sustainable Development Goals. The 17 Sustainable Development Goals (SDGs) were adopted by our global leaders in 2015 to act as a blueprint to help the world create a most sustainable future. IPG is excited to adhere to these international principles and is advancing our sustainability vision to align with the SDGs.



Stakeholder Engagement

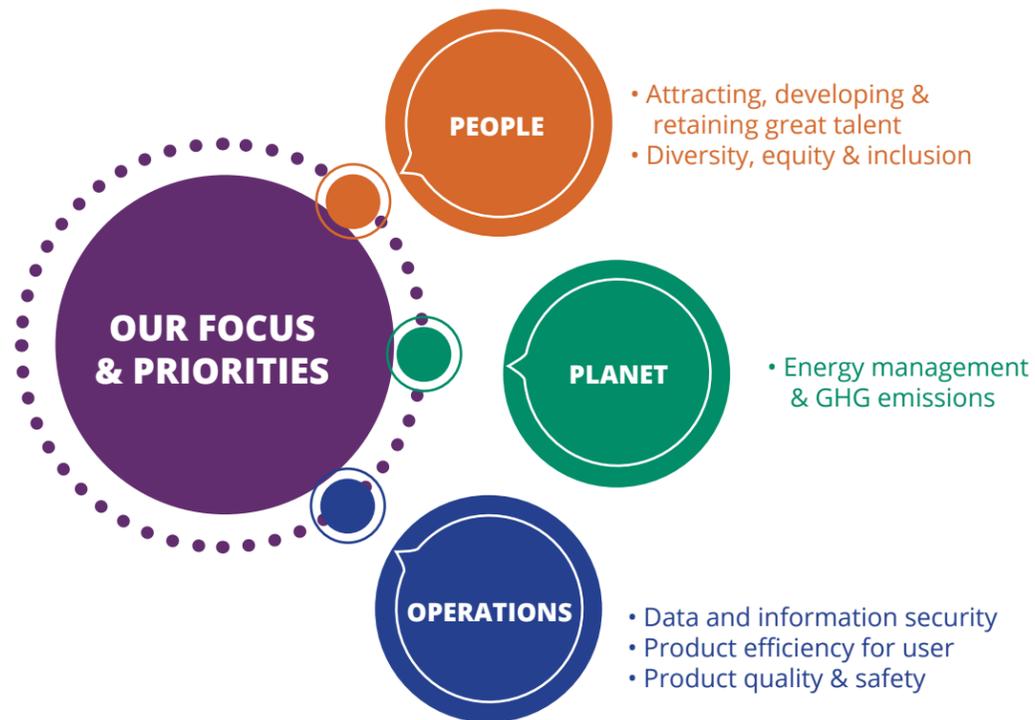
IPG engages with key stakeholders to communicate our efforts to protect the planet and to secure a safe working environment. We also continue to evaluate the primary concerns of our employees, customers and stockholders to ensure that our sustainability strategy is consistently updated to prioritize industry-specific and global material issues.

Our executive management team and our Board of Directors are engaged in our sustainability strategy and influence the direction of our agenda. IPG recognizes the value of transparency and accountability to our various stakeholders. Our strategy was developed by working with the disclosure recommendations and guidelines of third-party frameworks which include the following:

- Global Reporting Initiative (GRI)
- Sustainable Development Goals (SDGs)
- Sustainability Accounting Standards Board (SASB)

MATERIALITY ASSESSMENT

In 2021 we conducted our first materiality assessment to identify and understand the importance of ESG issues to our stakeholders and our company. The process included identification of internal and external stakeholders, benchmarking of competitors/peers, analysis of reporting frameworks, and an internal survey of functions that interact regularly with external stakeholders.



Our Sustainability Team

IPG employs a cross-functional team to manage our global sustainability program that analyzes economic, environmental and social topics. The team defines sustainability focus areas, organizes and standardizes our environmental, social and governance efforts, as well as conducts annual measurements and reports on key sustainability metrics.



Sustainability Agenda

IPG is focused on expanding our energy efficiency strategy across our enterprise. IPG is committed to decreasing our energy consumption, reducing our environmental footprint and supporting our customers' sustainability goals.

HIGHLIGHTS FROM 2021



Approximately **9 million metric tons** of CO₂ saved from using IPG lasers



555 metric tons of recycled metals a **43% increase** in 2021 only



Water usage comparable with 2017 despite 81% increase in optical power manufactured

Energy

- Over the long-term, IPG reduced our energy consumption per kilowatt of laser power sold
- IPG invested in co- and tri-generation equipment, variable frequency drives, additional insulation, LED lighting and other technologies to update the efficiency and infrastructure of our manufacturing facilities
- IPG is investigating the installation of solar panels at a planned new building which could provide clean power

Waste

- IPG continues to divert resources from landfills by increasing our recycling practices
- IPG is committed to investigating new opportunities to conserve resources and reuse materials
- IPG tracks how third-party waste disposals utilize their waste to ensure as much of it is recycled as is reasonably possible

Water

- IPG constructs its buildings with the most efficient plumbing equipment available to conserve water consumption
- IPG is committed to looking for ways to decrease water consumption
- IPG is committed to reducing clean water usage by utilizing untreated well water for heating and cooling, which can be returned to the environment without chemicals or treatment

Fiber Lasers & Electrical Efficiency

The evolution of laser sources is similar to the evolution of lighting sources. Fiber lasers pioneered and perfected by IPG are the most advanced and efficient laser type. In addition, our lasers process materials more quickly than other laser technologies in many applications. Improved efficiency and productivity helps our customers with the environmental sustainability of their operations.

IPG FIBER LASER 35% TO 50% EFFICIENT

IPG fiber lasers efficiencies are comparable to modern diode light sources. Highly efficient diode pumping, proprietary laser architecture and high surface-to-volume ratio of the fiber all combine to dramatically reduce electrical power consumption and the cooling costs.



Nd:YAG LASER 2% EFFICIENT

Lamp-pumped Nd:YAG lasers energy efficiency is approximately 2%, comparable to a traditional filament bulb. The remaining 98% of input energy is lost as heat. In a laser setting, this means that more electricity is needed to obtain the targeted optical output and to power chillers to dissipate the enormous amount of waste heat.

CO₂ LASER 7% TO 8% EFFICIENT

Although gas CO₂ lasers are 3-5 times more efficient than lamp-pumped Nd:YAG lasers, over 90% of the input energy is lost as heat, similar to a fluorescent lamp. Chillers are also required to dissipate significant heat loss.

Combating Climate Change

IPG is committed to protecting the environment by fueling the renewable energy sector on their journey to instituting a low-carbon society.

FIBER LASERS FOR **GREEN PRODUCTS**

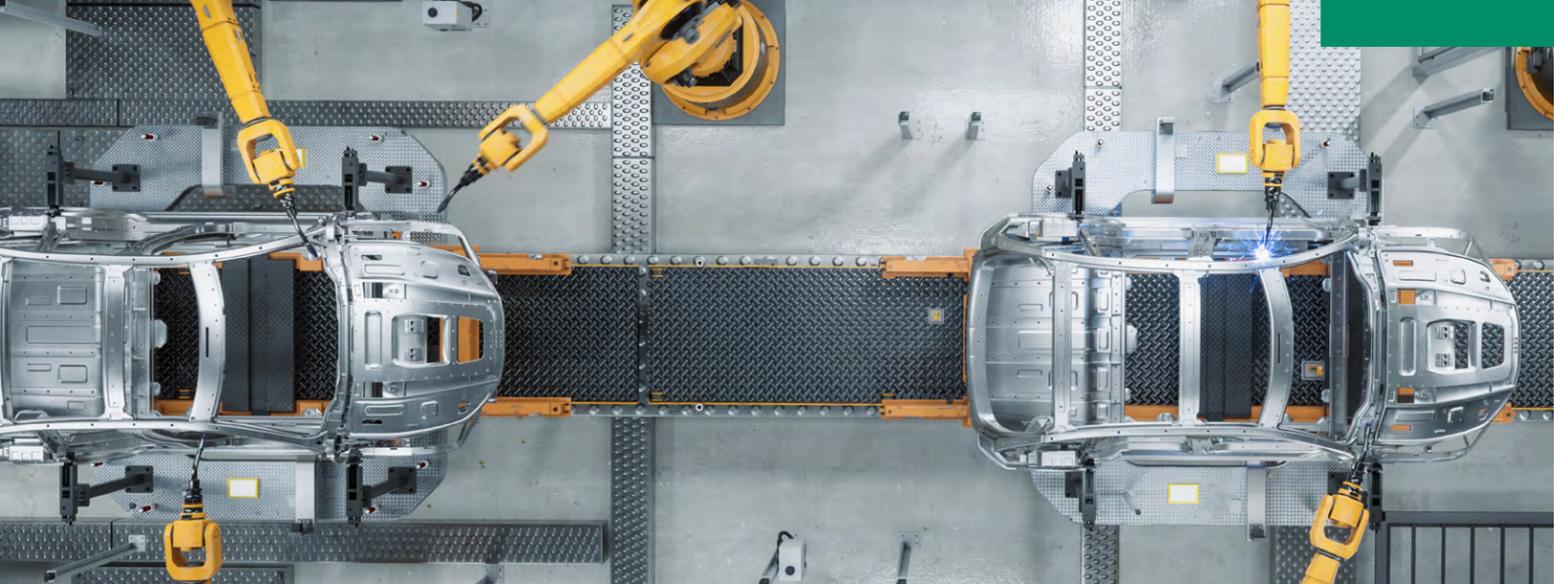
IPG fiber lasers are essential for manufacturing products across the renewable energy sector, including the production of photovoltaic cells. Of all renewable energy solutions, solar panels are anticipated to grow the fastest within the next 30 years. Fiber lasers are vital for advancing photovoltaic cell efficiency as well as decreasing manufacturing times and increasing yields.

Photovoltaic manufacturers benefit from IPG's extensive application knowledge and low cost fiber lasers. IPG green wavelength fiber lasers are critical to improving the efficiency of solar cells. These lasers, along with our near-infrared and ultraviolet fiber lasers, reduce photovoltaic manufacturing costs since laser-based processes are significantly more efficient, precise and faster than conventional processes due to high energy efficiency, excellent beam quality for tight process control and fast, high repetition rate energy pulses.

Advancing the production of solar panels and is an integral component of our strategy to help society lower fossil fuel usage and transition towards a future run on renewable energy sources.

IPG recognizes the immediacy of climate change and the importance of having a positive impact on the environment.

IPG fiber lasers are much more energy-efficient than competing products, resulting in savings of multiple terawatt hours of electricity and reductions of millions of tons of CO₂ each year. We are determined to support industries such as solar and electric vehicles that are propelling the transition to a more ecologically sound world.



Scopes of Greenhouse Gas Emissions

IPG is dedicated to reducing our environmental impact by tracking emissions and increasing the sustainability of our day-to-day operations. IPG consistently invests in increasing the efficiency of its operations, reducing both the cost of our products to our customers and the environmental costs of manufacturing. We implement energy efficient measures such as co-generation and heat recovery to optimize our Scope 1 emissions and reduce Scope 2 emissions.

Fiber Laser for Green Products

The biggest obstacle to worldwide mass adoption of electric vehicles (EV) is the high cost of automotive battery manufacturing. Fully automated IPG fiber laser welding solutions resolve challenges of EV battery welding quality and throughput. Fiber laser welding is more than 10x faster than traditional battery welding, forming millions of high quality welds, enabling cost-efficient mass production of millions of fuel cells per year.



Emissions from IPG Photonics that are a result of manufacturing, including natural gas, fuels and oils used on site

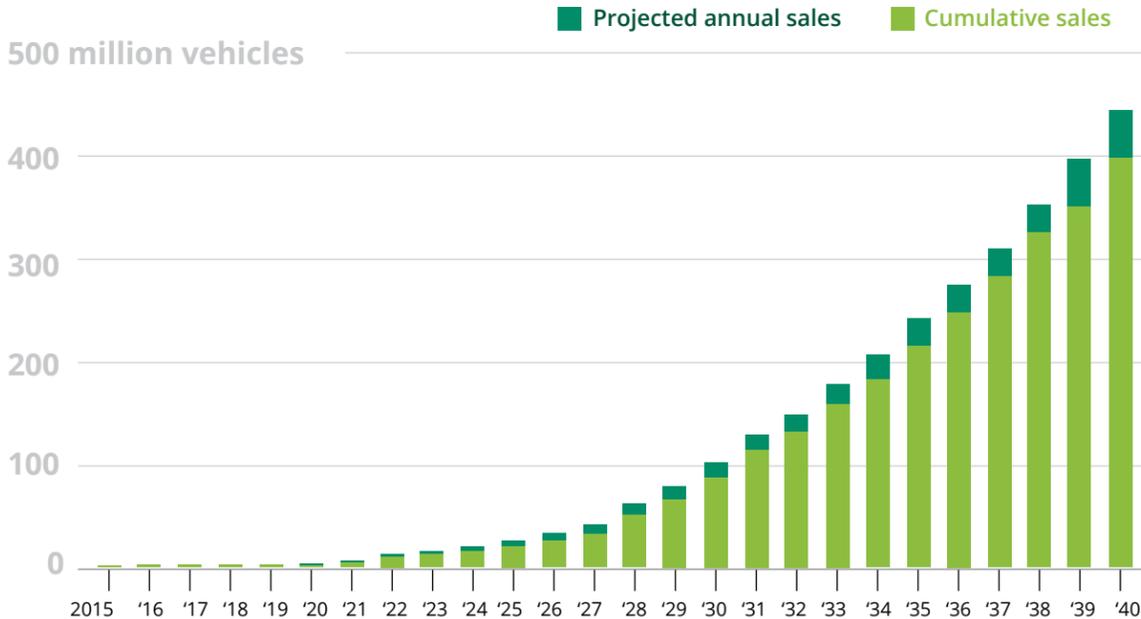


Indirect emissions that are generated offsite and purchased by IPG including electricity



Business activities that are not related to Scope 1 and Scope 2 emissions including waste generation, travel, metal extraction, product distribution and other goods and services

The Rise of Electric Cars



Data compiled by Bloomberg New Energy Finance, Marklines

While IPG products accelerate the world's transition to EVs by making them more affordable, IPG is also committed to promoting green living practices and use of EVs by our employees. IPG has installed EV charging stations at certain facilities and plans to install additional EV charging stations to incentivize employee use of EVs.

Product Stewardship

IPG is committed to advancing society with our highly unique innovations and solutions. IPG fiber lasers use a fraction of the electricity required by competing lasers and traditional laser technologies.

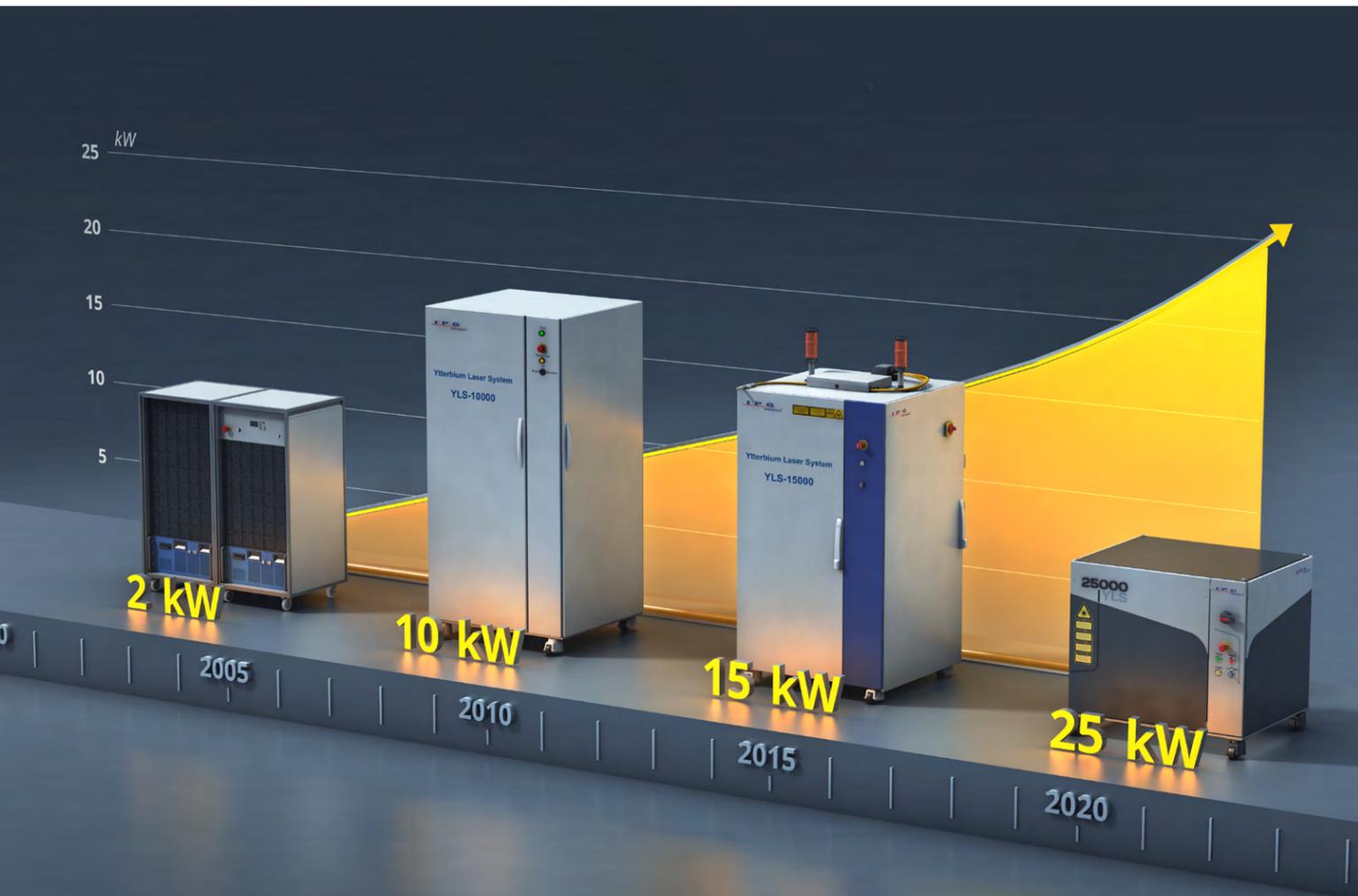
We strive to protect the planet by manufacturing generations of products with long life cycles that are more energy-efficient, compact and light.

There is a rising demand for laser power worldwide. IPG is actively accommodating this growing demand while shrinking the form factors of our high-power lasers to conserve resources, floor space and operating costs for our customers. At the same time, we continually increase the efficiency of our lasers, which conserves energy and reduces the water required to cool them.

COMPARISON OF FIBER LASERS

	5 kW Fiber Laser			10 kW Fiber Laser		
	2010	2020	Improvement	2010	2020	Improvement
Electrical Efficiency	~30%	~50%	67%	~30%	~50%	67%
Weight (kg)	500	250	50%	750	550	27%
Volume (m ³)	0.84	0.53	37%	1.34	0.67	50%

*2020 information from ECO-line of fiber lasers.



Use of IPG lasers saved approximately **34,000,000 metric tons of emissions**

That is **65 terawatts** of electricity saved since 2012

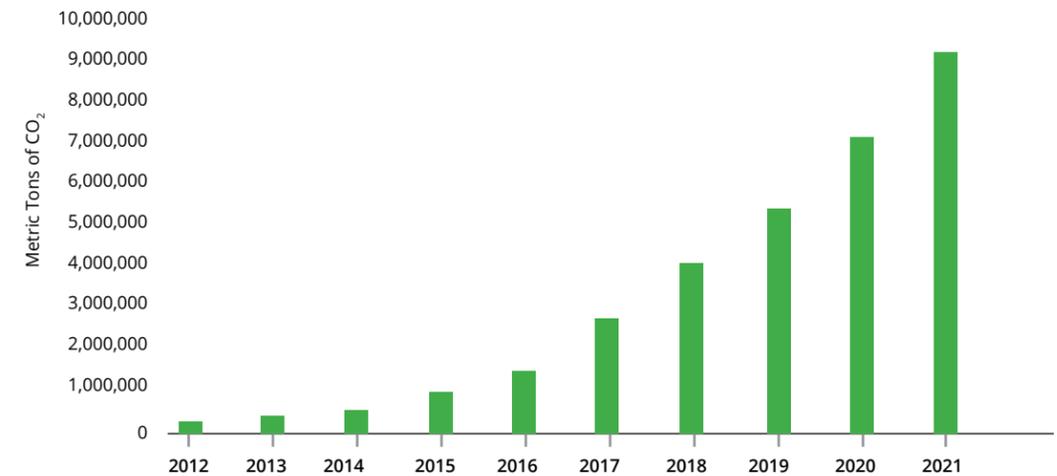
Greenhouse Gas Emissions

Core to our mission is improving the efficiency of our products and our manufacturing operations. This translates into two types of emission improvements – reducing the carbon footprint of our customers and our own.

Customer GHG Emissions

IPG invented high-power fiber lasers and successfully commercialized them. Our novel fiber laser technology is substantially more electrically efficient than traditional laser technologies enabling our customers to substantially reduce their greenhouse gas emissions and achieve their sustainability targets. We estimate that IPG lasers saved our customers approximately 34 million metric tons of CO₂ emissions cumulatively from 2012 to 2021 as compared to the use of traditional laser technologies.

CO₂ Savings From IPG Fiber Lasers Sold Since 2012



•Electricity savings calculation based on IPG total megawatts of power sold, and assumes IPG fiber lasers are replacing lamp-pumped and diode-pumped Nd:YAG, CO₂ and disk lasers
 •According to the World Bank, ~2/3rds of world energy is produced from oil, gas and coal
 •According to the US Energy Information Administration, typical oil, gas and coal power plants produce ~1.9, ~0.9 and ~2.2 pounds of CO₂ for every kilowatt hour of electricity

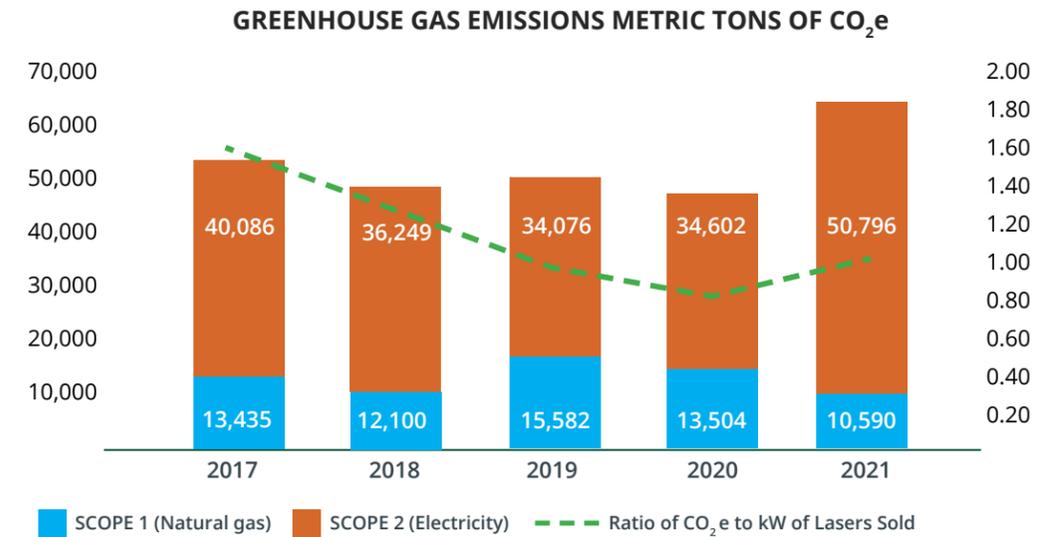
Greenhouse Gas Emissions

IPG GHG Emissions

IPG makes electronic equipment for competitive markets where the average selling prices for products can decrease significantly each year. For example, we increased laser manufacturing from 2017 to 2021 with the optical output power of products growing 81%. Despite the increase in optical power manufactured by us, IPG decreased its energy intensity, as measured by CO₂ emission per kilowatt of laser power, by 34% which demonstrates IPG's commitment to energy conservation and innovation.

Since 2017 our energy intensity decreased 37%

In 2021 our emissions increased due to significant growth in our production, addition of new facilities and temporary pause of tri-generation for implementation of a micro-grid which will allow IPG decrease future energy consumption.



IPG reports on its GHG emissions for its primary manufacturing facilities in the US, Germany, Russia and Belarus, and our facilities in Italy, together representing about 86% of our total square footage which include the most significant resource consumers from manufacturing and R&D. Data since 2019 includes Genesis Systems. We use the CO₂ conversion rates provided by US Environmental Protection Agency (EPA).

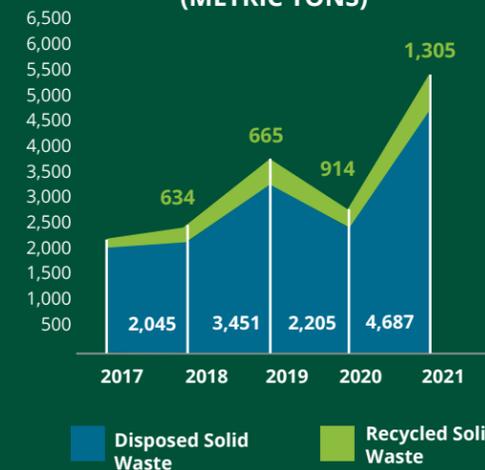
Energy & Resource Conservation

IPG has increased laser production over the last three years, but is actively lowering greenhouse gas emissions and preserving natural resources to protect balanced ecosystems.

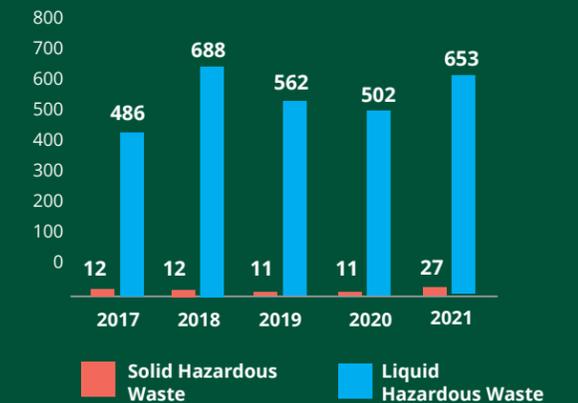
		2017	2018	2019	2020	2021
Energy Consumed MWh	Heating Oil	323	265	341	203	196
	Natural Gas	73,811	66,515	86,631	74,321	72,019
	Electricity	99,443	91,728	87,766	88,777	113,531
	Diesel	0	0	16	33	0
Total Energy Consumption		173,577	158,508	173,754	163,332	185,746
Emissions Metric Tons	Greenhouse Gas Emissions	53,522	48,350	49,658	48,107	61,565
	Laser Production kW	34,436	40,384	48,963	53,746	62,447
Carbon Intensity	GHG Emissions per Laser Sold (t/kW)	1.55	1.20	1.01	0.90	0.99
	Water Consumption Cubic Meters	196,540	176,546	180,843	190,605	200,723
Water Intensity	Water/kW Lasers Sold	5.7	4.4	3.7	3.5	3.2

IPG Photonics is determined to conserve energy, reduce greenhouse gas emissions and minimize the use of freshwater. IPG facilities are tasked with the responsibility of managing water consumption and waste water discharge. None of our major production facilities are located in regions with high or extremely high water risk per the World Resources Institute's (WRI) Water Risk Atlas.

NON-HAZARDOUS WASTE GENERATION & DIVERSION (METRIC TONS)



SOLID & LIQUID HAZARDOUS WASTE GENERATION (METRIC TONS)



Most of the waste we generate is a result of our manufacturing operations. From 2017 to 2021, we manufactured 81% more optical output power in our lasers. Our solid non-hazardous waste grew because of this as well as the acquisition of Genesis Systems Group in December 2018. In 2021, waste generation increased due to ongoing construction, as well as changes and increases in production.

Appropriately 90% of our waste in 2021 was non-hazardous. The remainder was considered non hazardous, the management of which is regulated and strictly monitored. We implement controls to ensure responsible handling of hazardous waste and prioritize treatment and recycling.

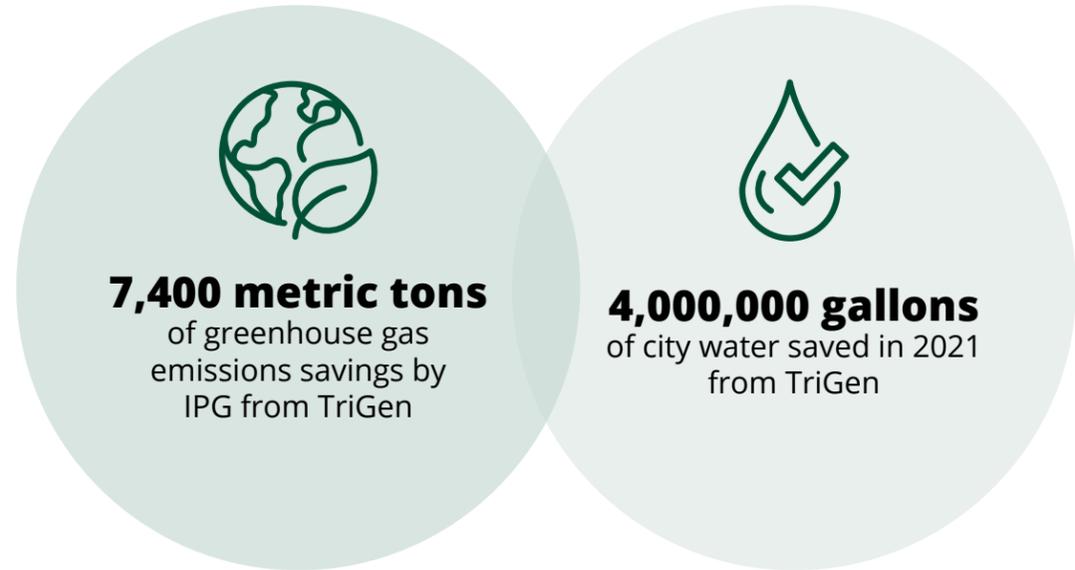
We recycle about 22% of the non-hazardous waste, a 6% increase since 2017. IPG has a robust recycling program and we are committed to identifying new recycling opportunities, conserving precious metals, diverting additional waste from landfills and reducing our output of hazardous waste.

IPG reports on its GHG emissions for its primary manufacturing facilities in the US, Germany, Russia and Belarus, and facilities in Italy together representing 86% of our total square footage which include the most significant resource consumers from manufacturing and R&D. Data since 2019 includes Genesis Systems. We use the CO₂ conversion rates provided by US Environmental Protection Agency (EPA).

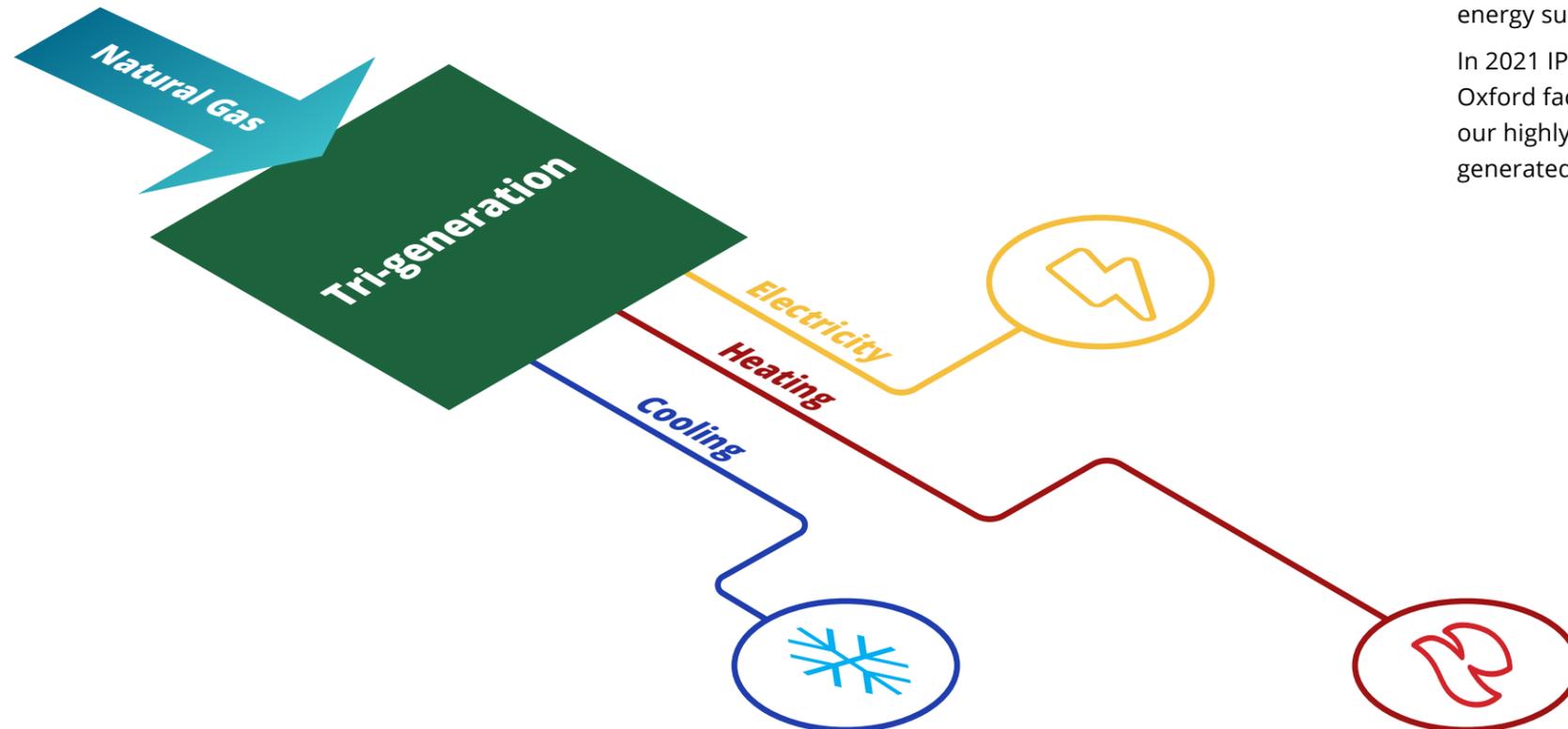
A Highly Efficient Energy System

Tri-generation (TriGen) is a clean and highly productive simultaneous process of power, heating and cooling generation from only one fuel type. By using waste heat recovery technology to capture a significant proportion of wasted heat, IPG is saving energy and protecting the environment from additional air pollutants. We substantially reduced our demand from electrical utilities, which may be coal or diesel-powered, through our on-site TriGen systems. Currently, our headquarters has approximately 4.25 MW of combined heat, cooling and power (CHP) TriGen equipment and our Italian facility has 0.25 MW of TriGen equipment. Additionally, our German facilities implemented a heat recovery system to reduce emissions and optimize fuel usage.

IPG utilizes well water from an underground aquifer in our TriGen system. We reduced our city water consumption by 4,000,000 gallons which also reduced the chemicals added to city water.



OUR TRIGEN SYSTEMS RECYCLE HEAT TO PROVIDE HEATING AND COOLING



The utilization of TriGen technologies have lowered operating costs, reduced greenhouse gas emissions and increased the security of our energy supply.

In 2021 IPG implemented a new microgrid system which will allow our Oxford facility to conserve energy. The microgrid will increase usage of our highly efficient TriGen equipment and reduce reliance on electricity generated remotely by the electric utility.

Architectural Efforts Toward Conservation

IPG believes that environmentally sound practices begin at the ground level. That is why we implemented several programs to lower energy consumption and natural resource usage.



The insulation in our new construction exceed building codes up to **25%**



We replace traditional light fixtures with LED light bulbs worldwide using **75%** less energy



We use water saving fixtures in our new construction projects

VARIABLE FREQUENCY DEVICES (VFDS) TO DECREASE ENERGY CONSUMPTION

A VFD is one of the most effective energy saving tools. It is an electronic controller that adjusts the speed of an electric motor to the specific demands of the work being performed. VFDs are an alternative to standard single-speed drives which can only operate at full speed. Many machines can be operated at less than full speed, such as HVAC systems, pumps, fans and production equipment. Other benefits of VFDs include prolonged equipment life and the ability to recover energy from braking. IPG has installed over 300 VFDs to date and will continue to advance the efficiency of our building and production equipment through expanded VFD investments.



VFDs save 30%-40% of energy compared to single-speed drives



Our People

- Our People
- IPG by Geography
- Diversity and Inclusion
- Our Workforce
- Creating a Culture of Success
- Safety in the Workplace

Our People

Our employees are our most valuable asset. They define and represent who we are. We are committed to attracting and retaining the best talent, and we believe that an engaged, diverse and thriving workforce will drive a sustainable future for our company and society. IPG is proud of our supportive culture, innovative spirit and workplace programs.

DIVERSE LEADERSHIP: IPG is proud to support a culture that values different backgrounds and experiences. A substantial portion of our global leadership workforce consists of women and diverse employees in management roles.

EMPLOYEE DEVELOPMENT: IPG also provides continual development to our employees focused on developing their skills and competencies. Examples include monthly leadership training to develop management skills to effectively address contemporary workplace management issues. We provide employee support for attendance at professional conferences, seminars and technical presentations.

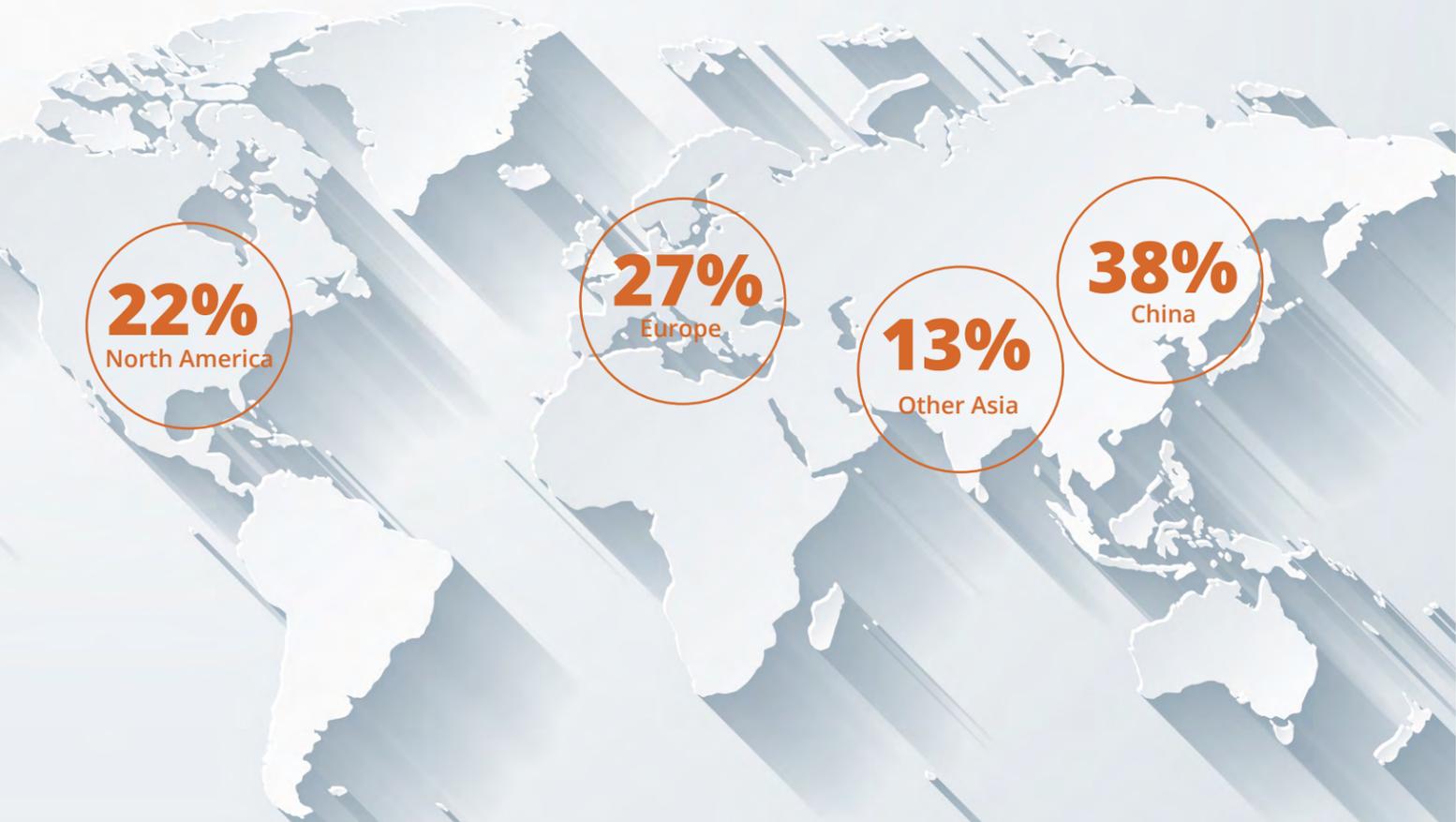
EDUCATION ASSISTANCE: IPG pays for educational courses related to an employee's work or as part of a degree program, including tuition, lab fees and books. This program has been effective enabling employees to attain advanced degrees and enhance their career opportunities.

INTERNSHIP PROGRAM: Since its inception, IPG has been committed to fostering diverse and young talent through our internship program. Our paid internships provide practical experience across numerous divisions for college students and recent graduates.

BENEFITS: Employment with IPG offers top-rated benefits and competitive compensation designed to support and retain our employees. Our benefits are locally customized such as health and dental insurance coverage and retirement savings plans. We also offer programs to help our employees participate in our profitability through bonuses, equity grants and an employee stock purchase plan, which are available generally to salaried employees.

IPG By Geography

2021 Revenue by Principal Regions



Diversity & Inclusion

IPG has made great strides to increase diversity in manager positions, building internal resources for potential future executive openings. We recruit and develop diverse candidates for available leadership and other positions at IPG by posting on national and local diversity job boards and maintaining partnerships with organizations and community groups that focus on the needs of minority candidates. IPG enhanced the visibility of our job opportunities via the CIRCAWORKS program which is focused on community-based organizations targeted to reach women, minorities, older workers, individuals with disabilities, veterans, LGBTQIA applicants. We require our search firms to seek female and diverse candidates and we engage minority-owned search firms.

To further this goal IPG recently developed a Diversity, Equity and Inclusion Charter and launched a committee of employees. IPG is committed to providing an environment where employees are encouraged and allowed to be their authentic selves, feel empowered to contribute openly, and can grow to their fullest potential.

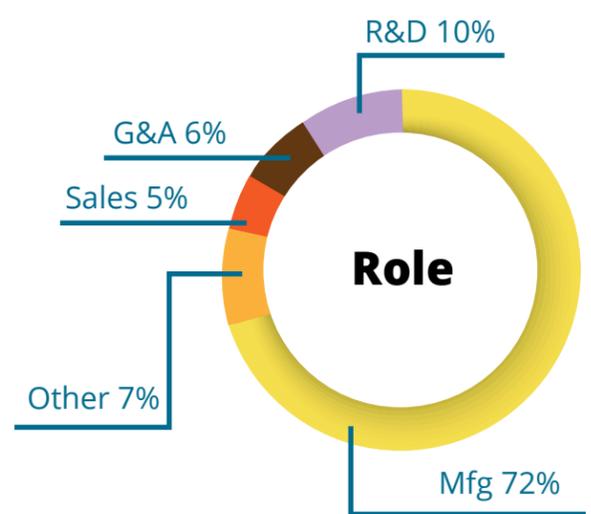
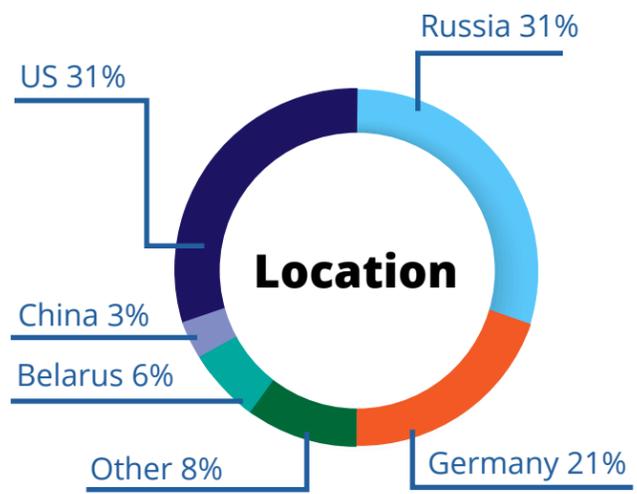
In 2021, IPG partnered with the internship program INROADS, an international non-profit organization designed to promote ethnic diversity across the corporate world. As a national sponsor of INROADS, IPG gained access to extraordinary talent, including top of the class students and recent alumni, to assist IPG at our operations in the United States.

IPG also started a relationship at the national level with the Society of Hispanic Professional Engineers (SHPE), the Society of Women Engineers (SWE) and the National Society of Black Engineers (NSBE). With these three programs, IPG is working on developing additional programs for corporate sponsorship as well as intern and mentoring opportunities.

We actively recruit at universities having higher than average populations of women and minorities in STEM-related programs, including participation in virtual career fairs during the global pandemic. IPG also strives to foster talent within the community by recruiting within the local school systems for a variety of different positions. IPG continues to foster innovation and offer educational opportunities to the next generation through scholarships to graduates of Oxford High School and Bay Path Regional Vocational Technical High School.

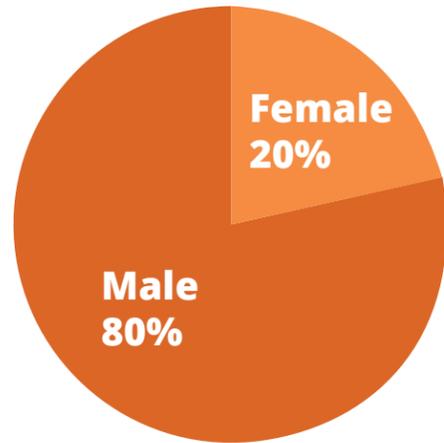
IPG is also an active member of the Boston College Workforce Roundtable – part of the Boston College Center for Work & Family. The Center for Work & Family is the country's leading university-based center focused on helping organizations enhance the employee experience, increase productivity and improve the quality of employee lives.

~7,000 Employees Worldwide



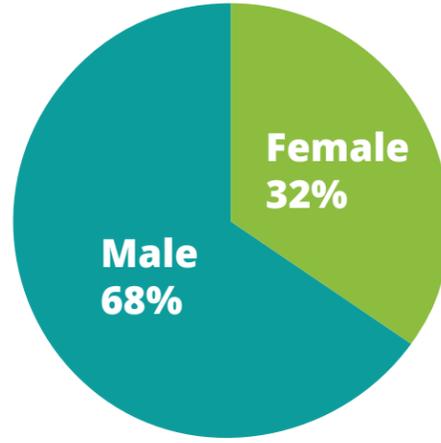
Our Workforce

IPG is committed to empowering every member of our global workforce. Management ensures that all personnel receive equal opportunities to thrive and grow within the company. IPG recognizes the importance of a balanced workforce and strives to employ and promote women into leadership positions across all IPG locations. We are proud that in China, our largest single market, 50% of our leadership team is female.

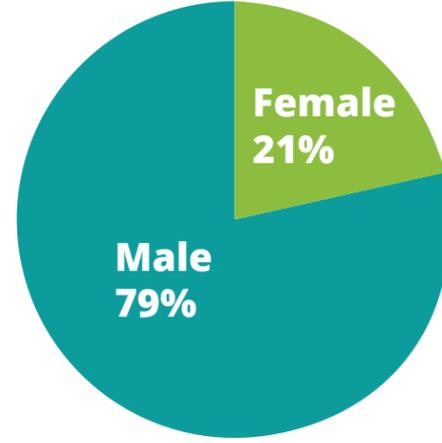


Global Optics and Photonics Industry

SPIE 2017: GENDER EQUITY IN THE OPTICS & PHOTONICS WORKPLACE



IPG Global Workforce

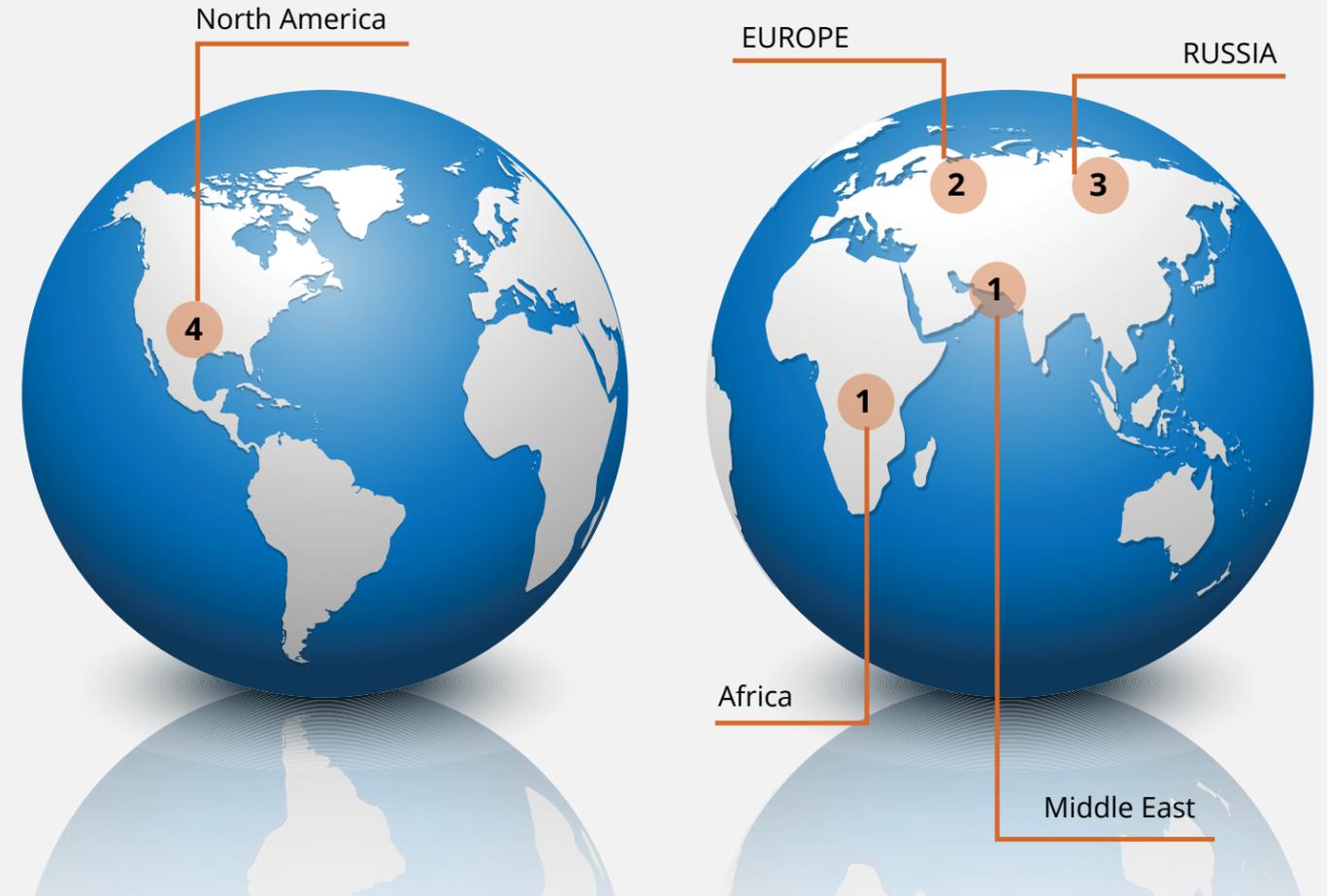


IPG Senior Leaders & Managers



Female Employees by Region

EXECUTIVE DIVERSITY (Birthplace of management at December 2021)



IPG has been fortunate with long executive tenures and minimal executive turnover. While our executive team brings the perspectives of different global cultures based upon the many continents and countries where our executives were born, the diversity of our executive team does not yet reflect that of our workforce. To be more inclusive, IPG has made strides in increasing diversity, including the appointment of a female as vice president, and will continue to progress in its efforts. Further, we will continue to look for opportunities to increase diversity in terms of race, ethnicity and gender across all levels of management by developing internal candidates for executive openings and seeking diverse candidates in outside searches.

In this respect, we require our search firms to seek female and diverse candidates. The Board of Directors supports advancing our human capital management strategy to ensure more opportunities for diverse candidates. As a regular part of its sessions with company management, our Board of Directors will monitor the company's progress in these efforts and undertake to continue providing our executive leadership with input on how to enhance our management team's diversity and report the outcome of these efforts periodically to our stakeholders. Three female directors joined our Board since January 2021, one of whom is racially diverse, and the Board has set the tone by formally adopting a written policy to require the external director candidate pool to include female and/or racially/ethnically diverse candidates.

Our Governance



- Philanthropy
- A Business of Ethical Operations
- IPG Photonics Governance
- Innovations Designed with Integrity Upholding Human Rights
- The Power to Transform 2022
- About this Report

IPG Photonics Governance Highlights



Independent Leadership & Oversight

- Governed by a 10-member board of directors, 7 of whom are independent directors under Nasdaq Guidelines
- Separate Board Chair / CEO roles since May 2021; appointed non-executive Board Chair in October 2021
- Board approved oversight framework for ESG risks in 2022



Continued Focus on Board Refreshment

- Focused on increasing Board diversity
- Adopted Rooney Rule in 2021, ensuring diverse candidates are part of any Board search
- Ongoing process to refresh and strengthen board composition with shareholder input; 5 new directors added in the past 4 years
- 30% of the Board is comprised of female directors



Structured to Empower Shareholder Rights

- Annually elected directors
- Director majority voting policy
- Single class of voting stock and no supermajority voting provisions
- Supermajority of independent directors and 100% independent Board committees

ESG Oversight

Key ESG matters, including environmental risks and human capital risks such as diversity, equity and inclusion and employee health and safety, could have an impact on our company. Earlier this year, our Board reviewed an enterprise-level ESG risk assessment to identify and understand specific, material risks within the ESG realm. Specific ESG topics are generally overseen by the Board as a whole or, in certain circumstances, by the Board committee generally responsible for the subject matter. Our Audit Committee oversees risks related to financial processes, disclosures and ethics, our Compensation Committee oversees strategies related to succession, leadership development and certain labor practices, and our Nominating and Corporate Governance Committee recommends risk management oversight allocation and stakeholder engagement. The Board also supports and regularly inquires about progress in the Company's reporting of ESG policies, metrics and related disclosures. During 2021, the Board approved policies that enhance the Company's commitments to respect human rights and to transparency of political contributions.

Philanthropy

IPG is actively contributing to non-profit organizations and programs that focus on education, community welfare, arts and social services. IPG recognizes the importance of helping our neighborhoods, and so we strive to enhance our local communities across the globe. In the United States, IPG supports dozens of charities across the world with the goal of promoting community engagement and advancing economic opportunities.



EDUCATION

We have a stake in various programs that help students be well prepared to be tomorrow's leaders and innovators:

- Support secondary education programs that enhance core competencies in STEM
- Focus on helping students develop necessary reading, writing and analytical skills



CIVIC & SOCIAL SERVICES

IPG believes that it is important to ensure that our communities have access to the most basic needs. We want to improve the quality of life in our regions by empowering people to achieve personal growth and encouraging them to take advantage of new opportunities. IPG works to establish more experiences for people in their communities by supporting programs that advance:

- Economic and workforce development
- Diversity
- Scientific literacy
- Conservation and sustainability



ARTS & CULTURE

IPG invests in programs that promote participation in the arts. Artistic expression inspires creativity and improves mental health. IPG supports a variety of opportunities for the young and the elderly from underserved or diverse communities to partake in cultural and artistic experiences.



HEALTH & WELFARE

IPG supports local health and welfare programs. We also donate to local youth and recreational centers that promote responsible citizenship, education and community involvement. IPG is focused on initiatives that improve the quality of healthcare & wellness.

A LOOK INTO THE FUTURE:

IPG made a substantial deposit in a local Black-owned bank, whose focus includes closing the racial wealth gap. Putting our capital to work in minority communities increases opportunities for lending and investments in minority communities.

IPG has made a donation to the international non-profit Girls Who Code in support of its mission to close the gender gap in computing and provide learning opportunities to learn to code while preparing for a career in tech.

A Business of Ethical Operations

IPG values strong corporate governance with a focus on protecting the safety and basic human rights of all our employees across the globe.

CODE OF CONDUCT

At IPG, all employees are responsible for adhering to the values and guidelines included in our Code of Business Conduct. Across the world, all IPG employees have a responsibility to uphold the code and respect our high ethical standards. IPG is committed to running a moral, ethical and trustworthy enterprise. The Code of Business Conduct highlights our regulations and values to help employees identify and avoid any unethical actions that would discredit our reputation and ethical standards.

WHISTLEBLOWER POLICY

IPG is compliant with all applicable security laws and regulations, accounting standards, accounting controls, audit practices and bribery prohibitions. Any IPG employee may submit a good faith complaint to the management without fear of dismissal or retaliation.

ANTI-BRIBERY POLICY

IPG operates in accordance with applicable anti-bribery regulations and local laws. Our Anti-Corruption Policy advises directors, employees, agents and representatives of IPG of their position regarding sensitive transactions and requires that transactions are executed, and access to assets is permitted, only in accordance with management's authorization guided by applicable laws and regulations.

SUPPLIERS CODE OF CONDUCT

IPG works with suppliers who are ISO 9001:2015 certified and are committed to business integrity, human rights, protection of information and EHS management. Our suppliers adhere to the global, fundamental principles of human rights including the freedom of association, right to organize, abolition of forced labor, elimination of child labor, equality and antidiscrimination rights, and provision of legally mandated employee benefits.

Innovations Designed with Integrity

HAZARDOUS MATERIALS:

IPG carefully manages all materials and chemicals that are used during production in order to protect the environment and ensure the health and safety of our workers.

European Union REACH - IPG commits to the safe use and identification of chemicals per the requirements of Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH). Our products are "articles" as defined in 3(3) of REACH and do not release substances under normal use. According to REACH, suppliers of articles must provide recipients with information on Substances of Very High Concern (SVHC) if those are present above a concentration limit of 0.1% on an article level. We monitor updates to the list of SVHCs and we strive to minimize or eliminate SVHC substances. Although a substantial majority of our products into the EU marketplace do not contain SVHCs above the specified concentration limits, there may be some that do. We are committed to providing our customers with information regarding SVHC in our products and will continue to monitor our products under REACH.

European Union RoHS and WEEE - IPG complies with applicable provisions of the EU Restriction of Hazardous Substances (RoHS) Directive and Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) targeting the reduction of environmental impact of waste electrical and electronic equipment. IPG is committed to compliance with the RoHS and WEEE Directives and minimizing the environmental impact of its products.

CONFLICT MATERIALS:

IPG is committed to the responsible sourcing of tin, tantalum, tungsten and gold used in our products and IPG conducts annual due diligence of its suppliers to determine the sourcing of conflict minerals in its products and confirms there is no evidence that the conflict minerals in IPG's product funded conflict. IPG will not knowingly source any conflict minerals from sources that fund conflict. If IPG's due diligence reveals that any of IPG's suppliers have provided IPG with goods or metals that funded conflict, IPG will seek alternative sources for such goods or metals. IPG files a conflict minerals report with the SEC.

COMPLIANCE & RISK MANAGEMENT:

At IPG, risk management is a priority for our Board of Directors and senior management. Effectively monitoring and managing risk are essential to the successful execution of IPG's business strategy. Managers at IPG have the power to manage, mitigate and elevate risks to senior management. The Board has oversight for risk management with a focus on the most significant risks, including strategic, operational, financial and compliance risks.



The Power to Transform 2022

IPG is determined to advance our commitment to society and our planet. We are dedicated to enhancing our sustainability program and to updating our agenda periodically.

IPG plans to establish new goals and conduct assessments to further our sustainability agenda, to reduce our environmental footprint and to advance our community engagement efforts. Among these are to conduct an assessment of climate change upon our business and operations, to investigate opportunities to invest in solar or wind energy to reduce our greenhouse gas emissions and to continue to pursue electrical efficiency increases in our products and operations, with a target reduction of 10% in CO₂ emission per kilowatt of laser power produced over the decade starting 2020 (assuming the current product mix).

Since the publication of our first report in December 2020, we gathered data on energy, water, waste and GHG from additional subsidiaries to gain a further understanding of our environmental footprint. In addition, we completed our first materiality assessment of our key stakeholders. IPG also made a substantial deposit in a local Black-owned bank.

IPG is determined to address the evolving challenges facing society and the planet by continuously updating our priorities and utilizing our unique innovations and technological processes to transform products across all industries.

About this Report

This sustainability report covers IPG's approach to sustainability and corporate social responsibility as well as our global progress on environmental, social and governance (ESG) topics. This report was published in April 2022 and covers data from the 2021 calendar year and prior years as indicated. While this report was not developed in accordance with the GRI Sustainability Reporting Standards or SASB standards, a reference to specific disclosures has been included where full or partial information has been provided. That means we have assessed our most material ESG impacts and have aligned our reporting with them. The report encompasses the operations and geographies noted specifically throughout the report.

Information contained in this document is summary in nature and subject to change without notice.

Further information on IPG's financial information and sustainability strategy can be found in our Annual Report, Investor Guidebook and IPG Photonics' Form 10-K.

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Contact Us:
Please send any questions or comments about this report to CSR@IPGPhotonics.com.

IPG Photonics Corporation
50 Old Webster Road
Oxford, MA 01650
IPGPhotonics.com

Appendix

UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

IPG Photonics' sustainability strategy is in alignment with the United Nations Sustainable Development Goals (SDGs). IPG's innovations support the United Nations along with their goal of establishing a more sustainable society by 2030.



GOOD HEALTH & WELLBEING (PAGES 31)

IPG responded to COVID-19 by instituting new policies to maintain the supply chain while simultaneously ensuring the safety of our employees across the globe. Our products help transform lives in the healthcare industry and improve worker safety across the globe. We provide proper laser safety training for our employees in accordance with the OSHA guidelines.



QUALITY EDUCATION (PAGE 38)

IPG is committed to ensuring that today's students are well prepared to be tomorrow's leaders and innovators. Our programs are targeted at post-secondary education that enhances core competencies in STEM.



DECENT WORK & ECONOMIC GROWTH (PAGES 8,9 & 29)

IPG is an equal opportunity employer with competitive employee benefits and compensation. Our vertical-integrated business model allows us to be a leader in the production of fiber lasers and provide solutions to a variety of industries across the world that are advancing technologies and the efficiency of the global workforce.



INDUSTRY, INNOVATION AND INFRASTRUCTURE (PAGES 9 & 16-18)

Our innovations revolutionize automation, industrial production and the automotive industry. Our superior quality and energy-efficient lasers are built to last and protect the environment.



REDUCED INEQUALITIES (PAGES 31-33 & 40)

Globally, IPG is committed to fostering a work environment that promotes diversity and inclusion. We adhere to our Code of Business Conduct and Human Rights Policy to align our business to protect our employees and provide them with the necessary support they need to succeed.



RESPONSIBLE CONSUMPTION & PRODUCTION (PAGES 9 & 21-23)

IPG carefully monitors our internal supply chain to reduce industrial waste, conserve energy and recycle a variety of materials, including precious metals.



CLIMATE ACTION (PAGES 21-27)

Our facilities have LED fixtures, low water consumption plumbing, variable speed motors and tri-generation plants that reduce emissions. Operating our energy-efficient fiber lasers, reduced global CO₂ emissions by 34 million metric tons compared to other competing laser technologies.

Appendix GLOBAL REPORTING INITIATIVE

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 102: General Disclosures		
102-1	Name of the organization	IPG Photonics Corporation About US .
102-2	Activities, brands, products & services	See corporate website. About US .
102-3	Location of headquarters	50 Old Webster Road, Oxford, MA 01540
102-4	Location of operations	We operate four principal manufacturing facilities for fiber lasers, laser systems, fiber amplifiers, and related optical components, which are located in the United States, Germany, Russia and Belarus. We conduct our major research and development activities in Oxford and Marlborough, Massachusetts; Burbach, Germany; and Fryazino, Russia. We have numerous sales and service offices located throughout the world. 2021 Form 10-K .
102-5	Ownership and legal form	See 2022 Proxy Statement .
102-6	Markets served	See 2021 Form 10-K .
102-7	Scale of the organization	See 2021 Form 10-K .
102-8	Information on employees and other workers	As of December 31, 2021, we had approximately 6,580 permanent, full-time employees. We employ temporary workers in select operations, representing less than 6.4% of our total workforce. 2021 Form 10-K .
102-9	Supply chain	Vertical integration is one of our core business strategies through which we control our proprietary processes and technologies as well as the supply of key components and assemblies. In general, a majority of our components are sourced internally, including semiconductor diodes, optical fibers, electro-optical components, optical components and mechanical assemblies. We purchase common and specialized mechanical, electrical and optical parts and raw materials from third-party vendors. IPG's supply chain organizations are designed to support the production of its high-performance fiber lasers and amplifiers in a legal, economically effective, and environmentally and socially responsible manner. 2021 Form 10-K .
102-10	Significant changes to the organization and its supply chain	IPG has acquired several companies in the last four fiscal years, which did not result in significant changes to IPG's size, structure, ownership or supply chain. IPG acquired Genesis Systems Group, LLC, an Iowa-based provider of welding solutions in 2018 in a cash transaction. 2021 Form 10-K .
102-11	Precautionary Principle or approach	A description of the role of the Board of Directors in risk oversight can be found in the 2022 Proxy Statement .
102-12	External initiatives	External initiatives include the following: Customs-Trade Partnership Against Terrorism - USA (CT-PAT); EU Waste Electrical and Electronic Equipment (WEEE) Directive 2005; Global Reporting Initiative—GRI 4.0 sustainability reporting guidelines; U.S. Foreign Corrupt Practices Act and similar anti-corruption laws enacted under the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions; US Equal Opportunity laws and accompanying regulations.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 102: General Disclosures		
102-13	Membership of associations	IPG does not disclose this information.
102-14	Statement from senior decision-maker	See Chairman and CEO letter to stockholders from 2022 Proxy Statement . 2022 Sustainability Report
102-15	Key impacts, risks, and opportunities	Key impacts, risks and opportunities are outlined in 2021 Form 10-K .
102-16	Values, principles, standards, and norms of behavior	Our Code of Business Conduct outlines our values, principles, standards and norms of behavior. This is reviewed annually by the Board of Directors and employees must undergo periodic training in local languages and acknowledge their acceptance of the Code. Additionally, IPG has the following core values: standing by our products; ethical behavior; compliance with laws and standards. Code of Business Conduct .
102-17	Mechanisms for advice and concerns about ethics	Employees are trained to seek advice about ethical or unlawful behavior and to report concerns about unethical or unlawful behavior and organizational integrity by either contacting the legal department or using a confidential method in the Code of Business Conduct .
102-18	Governance structure	See pages 26-32 of 2022 Proxy Statement .
102-19	Delegating authority	Not applicable.
102-20	Executive-level responsibility for economic, environmental, and social topics	IPG employs a cross-functional team to manage the company's global corporate social responsibility (CSR) program that analyzes economic, environmental and social topics. Along with input from our executive management team and the Board of Directors, the team defines CSR focus areas, organizes and standardizes IPG's CSR efforts and conducts measurement and reporting on key CSR metrics. 2022 Sustainability Report
102-21	Consulting stakeholders on economic, environmental, and social topics	IPG's cross-functional CSR team consults key stakeholders on economic, environmental and social topics. These stakeholders include customers, employees and stockholders. 2022 Sustainability Report
102-22	Composition of the highest governance body and its committees	See pages 11-25 of 2022 Proxy Statement .
102-23	Chair of the highest governance body	Dr. Eugene A. Scherbakov is the CEO. He is an executive officer of IPG. 2022 Proxy Statement
102-24	Nominating and selecting the highest governance body	See pages 23-25 of 2022 Proxy Statement .
102-25	Conflicts of interest	See pages 27, 28 and 34, 35 of 2022 Proxy Statement .
102-26	Role of highest governance body in setting purpose, values, and strategy	See pages 26-32 of 2022 Proxy Statement .

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 102: General Disclosures		
102-27	Collective knowledge of highest governance body	See pages 11-22 of 2022 Proxy Statement .
102-28	Evaluating the highest governance body's performance	See pages 26-28 of 2022 Proxy Statement .
102-29	Identifying and managing economic, environmental, and social impacts	See pages 26-28 of 2022 Proxy Statement .
102-30	Effectiveness of risk management processes	See pages 26-28 of 2022 Proxy Statement .
102-31	Review of economic, environmental, and social topics	See pages 26-28 of 2022 Proxy Statement .
102-32	Highest governance body's role in sustainability reporting	See pages 26-28 of 2022 Proxy Statement .
102-33	Communicating critical concerns	The process for reporting critical concerns is outlined in our Code of Business Conduct. We provide a confidential phone hotline, fax number and confidential web reporting. Code of Business Conduct .
102-34	Nature and total number of critical concerns	Not applicable.
102-35	Remuneration policies	See pages 36-61 of 2022 Proxy Statement .
102-36	Process for determining remuneration	See pages 36-61 of 2022 Proxy Statement .
102-37	Stakeholders' involvement in remuneration	See page 43 of 2022 Proxy Statement .
102-38	Annual total compensation ratio	See pages 60-61 of 2022 Proxy Statement .
102-39	Percentage increase in annual total compensation ratio	Not applicable.
102-40	List of stakeholder groups	Customers, employees, stockholders, suppliers, governments and communities. 2022 Sustainability Report

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 102: General Disclosures		
102-41	Collective bargaining agreements	Employees of several IPG companies participate in unions and employees of several other IPG companies participate in collective bargaining agreements. Human Rights Policy
102-42	Identifying and selecting stakeholders	IPG's key stakeholders include customers, employees, shareholders, suppliers and communities. 2022 Sustainability Report
102-43	Approach to stakeholder engagement	IPG engages with the stakeholders listed in disclosure 102-40 throughout the year.
102-44	Key topics and concerns raised	See 2022 Proxy Statement .
102-45	Entities included in the consolidated financial statements	See 2021 Form 10-K .
102-46	Defining report content and topic Boundaries	Not applicable.
102-47	List of material topics	Not applicable.
102-48	Restatements of information	Not applicable.
102-49	Changes in reporting	Not applicable.
102-50	Reporting period	2021.
102-51	Date of most recent report	Not applicable.
102-52	Reporting cycle	Annual.
102-53	Contact point for questions regarding the report	csr@ipgphotonics.com .
102-54	Claims of reporting in accordance with the GRI Standards	We self-declare that the report is prepared in accordance with GRI Standards: Comprehensive Option.
102-55	GRI content index	This Sustainability Reporting Table serves as our GRI content index.
102-56	External assurance	While we have not sought external assurance for the content of this Sustainability Reporting Table, certain data included is subject to external review and all information provided is reviewed internally.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 103: Management Approach		
103-1	Explanation of the material topic and its Boundary	IPG believes that CSR is a crucial component of the company's success. As such, the Company has allocated employee time and efforts to measure and manage our CSR initiatives. 2022 Sustainability Report
103-2	The management approach and its components	IPG employs a cross-functional team to manage the company's global corporate social responsibility program. Along with input from our executive management team and Board of Directors, the team defines CSR focus areas, organizes and standardizes IPG's CSR efforts and conducts measurement and reporting on key sustainability metrics. 2022 Sustainability Report
103-3	Evaluation of the management approach	IPG's CSR team consists of executives and managers in our Legal, Accounting, Investor Relations, Human Resources, Operations, Safety, Facilities, Supply Chain and Quality departments. The team's objectives are to develop and enhance IPG's global CSR program, identify gaps in CSR compliance and develop strategies to ensure compliance, and to improve IPG external communication of environmental, social and governance metrics. Specific ESG topics are generally overseen by the Board as a whole or, in certain circumstances, by the Board committee generally responsible for the subject matter. 2022 Sustainability Report
GRI 201: Economic Performance		
201-1	Direct economic value generated and distributed	2021 direct economic value generated \$1,464,455,000; 2021 economic value distributed: \$1,175,977,000; 2021 economic value retained: 288,479,000 2021 Form 10-K
201-2	Financial implications and other risks and opportunities due to climate change	We believe an increasing global focus on mitigating risks from climate change presents an opportunity for greater adoption of novel fiber laser technology. IPG fiber lasers use less electricity than competing laser products, and we estimate that operation of IPG fiber lasers instead of other types of lasers has resulted in approximately 34 million metric tons less global CO ₂ emissions by our customers since 2012 and over 9 million metric tons less CO ₂ emission in 2021 alone. We help our customers achieve their sustainability goals by lowering their electrical usage while still providing high efficiency fiber lasers. IPG lasers are used in renewable energy products, for example, in production of electric vehicles (EV), solar cells and EV batteries. Our laser technology also enables lighter materials to be used in transportation which in turn reduces weight and improves fuel efficiency. Laser welding reduces the amount of overlapping material required in joining, and IPG lasers enable more efficient and faster drilling of holes in turbine blades and fans that improve jet engine fuel efficiency. 2022 Sustainability Report pages 11, 14, 18, 19, 21.
201-3	Defined benefit plan obligations and other retirement plans	IPG does not offer a defined benefit plan to employees. IPG offers defined contribution plans that vary country by country. 2021 Form 10-K
201-4	Financial assistance received from government	Not applicable.
GRI 202: Market Presence		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	IPG does not disclose this information.
202-2	Proportion of senior management hired from the local community	IPG does not disclose this information.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 203: Indirect Economic Impacts		
203-1	Infrastructure investments and services supported	Not applicable.
203-2	Significant indirect economic impacts	IPG does not measure indirect economic impacts as noted nor does IPG track indirect economic impacts in context of external benchmarks.
RI 204: Procurement Practices		
204-1	Proportion of spending on local suppliers	IPG does not disclose this information.
GRI 205: Anti-Corruption		
205-1	Operations assessed for risks related to corruption	Operations at IPG are assessed for risks related to corruption. No significant risks have been identified.
205-2	Communication and training about anti-corruption policies and procedures	IPG employees receive training on IPG's anti-corruption policy upon employment and biannually.
205-3	Confirmed incidents of corruption and actions taken	Not applicable.
GRI 206: Anti-Competitive Behavior		
206-1	Legal actions for anti- competitive behavior, anti-trust, and monopoly practices	IPG has no legal actions for anti-competitive behavior, anti-trust or monopoly practices.
GRI 207: Tax		
207-1	Approach to tax	Our tax strategy is implemented in support of our business strategy and global operations. IPG reports profits and pays taxes on those profits in the countries of its operations, including research & development, manufacturing and sales, in accordance with the laws of each country. Our tax rate is based on our income, statutory tax rates and tax planning opportunities available to us in the various jurisdictions in which we operate. We file federal and state income tax returns in the United States and in numerous international jurisdictions. 2021 Form 10-K
207-2	Tax governance, control, and risk management	Our tax strategy is implemented by our Chief Financial Officer, along with other members of the finance tax group and regional controllers, in consultation with our executive management team and oversight by the Audit Committee of the Board of Directors. 2021 Form 10-K
207-3	Stakeholder engagement and management of concerns related to tax	We engage with tax authorities in the many regions in which we operate.
207-4	Country-by-country reporting	See 2021 Form 10-K.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 301: Materials		
301-1	Materials used by weight or volume	IPG does not track this information.
301-2	Recycled input materials used	See 2022 Sustainability Report pages 8, 9, 11 and 14.
301-3	Reclaimed products and their packaging materials	IPG provides incentives for customers to return pump modules, which we then repair, refurbish or recycle. 2021 Sustainability Report
GRI 302: Energy		
302-1	Energy consumption within the organization	Approximately 185,746 megawatt hours of electricity, heating oil, diesel and natural gas consumption in 2021 from main facilities in USA, Germany, Russia, Belarus, and Italy. 2022 Sustainability Report
302-2	Energy consumption outside of the organization	IPG does not track this information.
302-3	Energy intensity	61,565 metric tons CO ₂ emissions in 2021 equivalent per 0.99 kw of laser power shipped, refer to 2022 Sustainability Report
302-4	Reduction of energy consumption	In 2021, our energy consumption was 185,746 megawatt hours. The data now includes facilities in Italy, Russia and Belarus, as well as the new buildings in the US and Germany. Belarus began its operation in 2019 and is continuously expanding. 2022 Sustainability Report
302-5	Reductions in energy requirements of products and services	IPG has continually increased the wall-plug efficiency (watts of electricity required to generate a watt of optical energy) of our laser products. For example, the wall-plug efficiency of a 5 kilowatt continuous wave ytterbium laser has increased by about 67% from 2010 to 2020. 2022 Sustainability Report page 14, 15 and 20
GRI 303: Water and Effluents		
303-1	Interactions with water as a shared resource	IPG does not track this information.
303-2	Management of water discharge-related impacts	IPG does not track this information.
303-3	Water withdrawal	Approximately 200,723 cubic meters in 2021. 2022 Sustainability Report
303-4	Water discharge	IPG does not track this information.
303-5	Water consumption	IPG does not track this information.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 304: Biodiversity		
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	None to our knowledge.
304-2	Significant impacts of activities, products, and services on biodiversity	None to our knowledge.
304-3	Habitats protected or restored	None to our knowledge.
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	None to our knowledge.
GRI 305: Emissions		
305-1	Direct (Scope 1) GHG emissions	Approximately 61,565 metric tons CO ₂ equivalent in 2021. 2022 Sustainability Report
305-2	Energy indirect (Scope 2) GHG emissions	Approximately 50,976 metric tons CO ₂ equivalent in 2021. 2022 Sustainability Report
305-3	Other indirect (Scope 3) GHG emissions	IPG does not track this information.
305-4	GHG emissions intensity	GHG emission per kW lasers sold (MWh/kW) is 0.99 in 2021. 2022 Sustainability Report
305-5	Reduction of GHG emissions	Our GHG emissions rose in 2021 primarily due to an increase in production, expansion of IPG facilities and a temporary pause of Trigen generators usage due to implementation of microgrid. 2022 Sustainability Report
305-6	Emissions of ozone-depleting substances (ODS)	There are no ozone-depleting substances (ODS) found on site in the United States or Germany. In 2016, we purchased refrigerant for our Russian facility but have not purchased ODS since then.
305-7	Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	Not applicable.
GRI 306: Effluents and Waste		
306-1	Water discharge by quality and destination	IPG does not disclose this information.
306-2	Waste by type and disposal method	IPG does not disclose this information.
306-3	Significant spills	Not applicable.
306-4	Transport of hazardous waste	IPG uses licensed transporters only.
306-5	Water bodies affected by water discharges and/or runoff	Not applicable.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 307: Environmental Compliance		
307-1	Non-compliance with environmental laws and regulations	IPG has received no material fines or non-monetary sanctions for non-compliance with environmental laws and/or regulations in 2021.
GRI 308: Supplier Environmental Assessment		
308-1	New suppliers that were screened using environmental criteria	IPG expects our suppliers to adhere to Supplier Code of Conduct , which outlines environmental standards they must meet.
308-2	Negative environmental impacts in the supply chain and actions taken	IPG does not perform negative environmental impact assessments of its supply chain.
GRI 401: Employment		
401-1	New employee hires and employee turnover	IPG hired approximately 1,250 employees in 2021. 2021 Form 10-K
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	IPG does not disclose this information.
401-3	Parental leave	IPG complies with local laws to allow for parental leave for full time employees. 2022 Sustainability Report
GRI 402: Labor/Management Relations		
402-1	Minimum notice periods regarding operational changes	We provide a minimum number of weeks' notice to employees prior to implementing significant operational changes that could substantially affect them in accordance with local operations.
GRI 403: Occupational Health and Safety		
403-1	Occupational health and safety management system	In the US, IPG works with the globally recognized ANSI Z10 Management System.
403-2	Hazard identification, risk assessment, and incident investigation	IPG conducts hazards assessments and risk assessments. Incidents, injuries and illness are reported, tracked and investigated. 2022 Sustainability Report
403-3	Occupational health services	Designated clinics, alternative transportation for non-emergency follow-ups and eye care clinics are available at specific sites where applicable.
403-4	Worker participation, consultation, and communication on occupational health and safety	Where applicable there are regular safety meetings with our safety officers. Prevention medical check-up by the company doctor for applicable workers.
403-5	Worker training on occupational health and safety	Training at hire and retaining periodically varying by operations and exposures. 2022 Sustainability Report
403-6	Promotion of worker health	Yes, there are amenities related to health. 2022 Sustainability Report

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 403: Occupational Health and Safety		
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	We design and optimize our working stations to prevent posture damage or other health problems.
403-8	Workers covered by an occupational health and safety management system	Workers are covered by our operating procedures, which incorporate health and safety practices.
403-9	Work-related injuries	IPG tracks and reports in accordance with local laws and regulations. Work-related injuries and ill health are below the industry average, as disclosed in 2022 Sustainability Report .
403-10	Work-related ill health	IPG tracks and reports in accordance with local laws and regulations. Work-related injuries and ill health are below the industry average, as disclosed in the 2022 Sustainability Report .
GRI 404: Training and Education		
404-1	Average hours of training per year per employee	IPG does not disclose this information.
404-2	Programs for upgrading employee skills and transition assistance programs	IPG does not disclose this information.
404-3	Percentage of employees receiving regular performance and career development reviews	IPG does not disclose this information.
GRI 405: Diversity and Equal Opportunity		
405-1	Diversity of governance bodies and employees	IPG does not disclose this information.
405-2	Ratio of basic salary and remuneration of women to men	IPG does not disclose this information.
GRI 406: Non-Discrimination		
406-1	Incidents of discrimination and corrective actions taken	IPG does not disclose this information.
GRI 407: Freedom of Association and Collective Bargaining		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	We have identified none. IPG allows employees to have the right to freedom to association and collectively bargaining. Human Rights Policy

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 408: Child Labor		
408-1	Operations and suppliers at significant risk for incidents of child labor	We have identified none. Our labor policy prohibits the use of child labor and prohibits workers under the age of 15 or the minimum age under local law. IPG's Supplier Code of Conduct contains similar restrictions on child labor. Human Rights Policy Supplier Code of Conduct , Anti-Human Trafficking Policy
GRI 409: Forced Labor		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	There are no identified risks of child and forced labor abuse at any of our operations. IPG's Terms and Conditions of Purchase, Supplier Code of Conduct, and Anti-Human Trafficking Policy and Compliance Plan all contain explicit restrictions on child labor to which all suppliers are expected to adhere. IPG also supports the UK Modern Slavery Act and is committed to identify and address the risks of modern slavery, as outlined in IPG's UK Modern Slavery Act Transparency Statement. Human Rights Policy Supplier Code of Conduct , Anti-Human Trafficking Policy
GRI 410: Security Practices		
410-1	Security personnel trained in human rights policies or procedures	IPG hires third parties organizations for security which are required to comply with law and our Supplier Code of Conduct
GRI 411: Rights of Indigenous Peoples		
411-1	Incidents of violations involving rights of indigenous peoples	None.
GRI 412: Human Rights Assessment		
412-1	Operations that have been subject to human rights reviews or impact assessments	Not applicable.
412-2	Employee training on human rights policies or procedures.	IPG employees undergo Code of Business Conduct training biannually.
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	Contracts require suppliers to agree to our Supplier Code of Conduct, which includes human rights provisions. Supplier Code of Conduct
GRI 413: Local Communities		
413-1	Operations with local community engagement, impact assessments, and development programs	IPG Photonics actively contributes to non-profits organizations and programs that are designed to enhance education, community welfare and social services. IPG consistently donates equipment and machinery to first responders in the Massachusetts and Rhode Island area. 2022 Sustainability Report
413-2	Operations with significant actual and potential negative impacts on local communities	IPG has not identified any operations with significant actual or potential negative impacts on local communities.

Appendix

GRI Standard	Disclosure	IPG Photonics Disclosure, links
GRI 414: Supplier Social Assessment		
414-1	New suppliers that were screened using social criteria	IPG requires suppliers to comply with all applicable environmental, health and safety laws, regulations and directives. Suppliers are expected to protect the health, safety and welfare of their people, visitors and others who may be affected by their activities. Supplier Code of Conduct
414-2	Negative social impacts in the supply chain and actions taken	Through our vertical integration model, we reduce purchasing from a third-party supply chain as well as the negative social impacts of any third-party suppliers' actions.
GRI 415: Political Contributions		
415-1	Political contributions	IPG had no political contributions for the reporting period.
GRI 416: Customer Healthy and Safety		
416-1	Assessment of the health and safety impacts of product and service categories	The product safety group is responsible for ensuring the safety of our products. In addition, third-party certifiers are utilized to assess certain of our products.
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	IPG is not aware of any non-compliance concerning the health and safety impacts of any of our products or services.
GRI 417: Marketing and Labeling		
417-1	Requirements for product and service information and labeling	IPG is required by local laws to label its products to disclose laser light and other risks.
417-2	Incidents of non-compliance concerning product and service information and labeling	IPG is not aware of any non-compliance concerning the product and service information and labeling of any of our products or services.
417-3	Incidents of non-compliance concerning marketing communications	IPG is not aware of any non-compliance concerning the marketing communications of any of our products or services.
RI 418: Customer Privacy		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	IPG has not identified any substantial complaints received concerning breaches of customer privacy.
GRI 419: Socioeconomic Compliance		
419-1	Non-compliance with laws and regulations in the social and economic area	IPG has received no material fines or non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area.

Appendix SUSTAINABILITY ACCOUNTING STANDARDS BOARD

Reporting Period: January 1 – December 31, 2021

TOPIC	SASB CODE	METRIC	IPG PHOTONICS CORPORATION RESPONSE
Greenhouse Gas Emissions	TC-SC-110a.1	(1) gross global Scope 1 emissions (2) amount of total emissions from perfluorinated compounds	(1) Scope 1 emissions: 10,590 Metric tons CO ₂ e. IPG reports on its GHG emissions for its primary manufacturing facilities in the US, Germany, Russia and Belarus, and our facilities in Italy, together representing about 86% of our total square footage which includes the most significant resource consumers from manufacturing and R&D. (2) 30 Metric tons CO ₂ e.
	TC-SC-110a.2	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Ten-Year Target: Total reduction of 10% in Scope 1 and Scope 2 GHG emissions per kilowatt of laser power produced assuming the current product mix (in CO ₂ equivalent) in the decade starting with 2020. During 2017-2021: Despite an 81% increase in optical power manufactured by IPG since 2017, we decreased CO ₂ emissions per kilowatt of laser power by 37%. This demonstrates IPG's commitment to energy conservation and innovation. IPG utilizes LED fixtures, low water consumption plumbing, variable speed motors and tri-generation plants that reduce emissions. We use and implement additional tri-generation plants to ensure further energy conservation. Additionally, the use of IPG's energy-efficient fiber lasers reduced global CO ₂ emissions worldwide by approximately 34 million metric tons compared to other competing laser technologies.
Energy Management in Manufacturing	TC-SC-130a.1	(1) total energy consumed, (2) percentage grid electricity, and (3) percentage renewable	(1) 664,496 GJ (2) 65% (of total energy consumed) (3) 0% The implementation of a micro-grid in 2021 required a pause in the use of tri-generation, which caused an increase in grid electricity consumption. The micro-grid will allow IPGP to meet its goals for effective and responsible energy use by utilizing tri-generation in its full capacity after the micro-grid is fully operational, significantly reducing grid electricity use and CO ₂ emissions.
Water Management	TC-SC-140a.1	(1) total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	(1) Total Withdrawal: 200,723 cubic meters (for facilities in Alabama, California, Florida, Iowa, Massachusetts, Michigan, New Hampshire, New Jersey, Germany, Italy, Belarus and Russia). Less than 2% of total water withdrawn in regions with High or Extremely High Baseline Water Stress: - Moscow, Russia: 1.99% - Oviedo, Florida: <0.001% (2) Water consumption data currently is not captured.

Appendix

Reporting Period: January 1 – December 31, 2021

TOPIC	SASB CODE	METRIC	IPG PHOTONICS CORPORATION RESPONSE
Waste Management	TC-SC-150a.1	(1) amount of hazardous waste from manufacturing, (2) percentage recycled	(1) 681 metric tons (2) 0% Hazardous waste is processed by external waste services. We estimate that approximately 10% of the hazardous waste generated by our Oxford, MA facility is recycled by such waste services.
Employee Health and Safety	TC-SC-320a.1	Description of efforts to assess, monitor and reduce exposure of employees to human health hazards	In the US, IPG works with the globally recognized ANSI Z10 Management System. Our subsidiaries' EHS Management Systems are adjusted to comply with local laws and standards. Our global EHS Management System includes: - EHS Manual - Health and Safety Hazard Identification, Risk Assessment and Control - EHS Objective and Targets - EHS Management of Change and Equipment Sign Off - Health and Safety Performance Monitoring, Reporting and Compliance Evaluation - EHS Audit Global Work Process - EHS Management Review - Hazard Communication Program - Occupational Exposure Assessment for Airborne Contaminates - Emergency Preparedness and Response (Chemical, Spill, Fire, etc.) - Fire Protection Systems, Electrical Safety - Toxic, Flammable, Compressed Gases and Compressed Gas Cabinet - PPE - Preliminary medical examination and medical check-ups; Designated clinics, alternative transportation for non-emergency follow-ups and eye care clinics are available at specific site Only a very small number of our employees are cleanroom workers in semiconductor fabrication plants.
	TC-SC-320a.2	Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations (USD)	\$0

Appendix

Reporting Period: January 1 – December 31, 2021

TOPIC	SASB CODE	METRIC	IPG PHOTONICS CORPORATION RESPONSE
Recruiting and Managing a Global and Skilled Workforce	TC-SC-330a.1	Percentage of employees that are: (1) foreign nationals and (2) located offshore	(1) Foreign employees: 4.1% (2) Offshore employees: USA (country of domicile): 33.2% Rest of North America: 0.5% EMEA: 57% APAC: 5.7% LATAM: 3.5% The Company supports efforts to obtain permanent work status and/or naturalization to reduce risks associated with employment of foreign workers. It monitors immigration regulations and works with employees to manage issues they may face from time to time with working and traveling. We have increased efforts to develop local talent pools through apprenticeships and internships.
Product Lifecycle Management	TC-SC-410a.1	Percentage of products by revenue that contain IEC 62474 declarable substances (%)	0% IPG Photonics does not manufacture products that contain specific substances that cause harm to human health and/or the environment. IPG Laser complies with the REACH/RoHS regulation.
Product Lifecycle Management	TC-SC-410a.2	Processor energy efficiency at a system level for: (1) servers, (2) desktops, and (3) laptops	Not applicable for IPGP operations.
Materials Sourcing	TC-SC-440a.1	Description of the management of risks associated with the use of critical materials	IPGP discloses its management approach to their responsible minerals sourcing. We are aware of the potential supply shortage of rare earth elements and their use in the production of electronic components. Rare earth materials are used in our production process but we do not manufacture any of these materials and they are only added when needed. Through our enterprise-wide risk management and supply frameworks, tools and processes, we identify the loss of critical supplies as a risk that is managed, mitigated and is tracked within the supply chain planning. We evaluate critical material risks in our supply chain and build information from the evaluation into our business continuity plans. For rare earth materials we utilize mitigation plans to ensure continuity of supply (e.g., maintain safety stocks at our facilities worldwide, finding and continuously evaluating potential alternative sources, etc.) and procurement groups.

Appendix

Reporting Period: January 1 – December 31, 2020

TOPIC	SASB CODE	METRIC	IPG PHOTONICS CORPORATION RESPONSE
IP Protection and Competitive Behavior	TC-SC-520a.1	Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations (USD)	In FY21, IPGP did not incur monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations. SEC Form 10-K
Product Safety	RT-EE-250a.1	Number of recalls issued, total units recalled	0
	RT-EE-250a.2	Total amount of monetary losses as a result of legal proceedings associated with product safety	0
Business Ethics	RT-EE-510a.2	Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption	0

