Welcome to our

Sustainability Report **2023**

Contents

A word from our CEO

A message from our Sustainability Director

About Infineum

- 25 years of excellence
- Where we operate
- Our purpose, vision and values
- Our CARES values and behaviours
- Our value chain
- Our strategic vision

Our sustainability strategy

- Our materiality assessment
- Priority areas
- Our sustainability scorecard
- Engaging our industry stakeholders

Sustainable operations

- Environmental management
- Energy and climate
- Water and waste

Sustainable products

- In-use benefits
- Product stewardship
- Minimising product footprint

Sustainable supply chain

- Driving sustainability
- Managing upstream environmental impacts
- Safeguarding human rights in our supply chain

Safety

- A comprehensive approach
- Our safety culture
- Zero harm

Colleague engagement

- Being an excellent employer
- Developing and retaining talent
- Promoting diversity, equity, and inclusion (DE&I)

Community engagement

- Delivering a positive impact
- Promoting STEM education
- Charity fundraising

Governance

- Corporate governance
- Embedding sustainability
- Business ethics

About this report

- About this report
- Data methodology
- Cautionary statement

Key figures

01 | A word from our CEO

A word from our CEO

Aldo Govi, CEO, Infineum



As Infineum celebrates 25 years of operations and we look forward to the next 25 years of progress towards our net zero ambition by 2050, I am pleased to share our fourth annual sustainability report.

This is a journey and we have made excellent progress, but improvement will not always be linear, especially when set against the backdrop of a challenging external environment, but our purpose of creating a sustainable future through innovative chemistry, continues to drive us forward.

A word from our CEO

A word from our CEO

Over the last five years we have made year on year reductions in the carbon intensity of our operations. More recently, a reduction in production volumes in line with the market has impacted this trend. In response, we have implemented action plans to enable us to continue our trajectory towards our net zero ambition by 2050.

We've completed a full sustainability assessment of our product portfolio, setting a new baseline for more sustainable products. So, we've been engaging with our suppliers, to help us make progress on our scope 3 emissions increasing our data on the product carbon footprint (PCF) of raw material spend from 16% to just over 50%. This data will help us make better-informed decisions to reduce our impact on the climate. We have also increased the coverage of supplier sustainability assessments and improved the integration of sustainability criteria into key procurement processes.

Another key aspect of reducing scope 3 emissions is the introduction of re-refined base oils (RRBO) into products, although currently at limited scale, over time this will help us to reduce the carbon footprint of our products. As well as being a significant opportunity to decarbonise our supply chain, it's one of the examples in which we are trying to find sustainable innovations that bring added value to our customers.

This year we have continued to educate our colleagues and increase their sustainability skills, combined with the ongoing delivery against functional roadmaps we have created momentum across the organisation. One great example is the increase in colleagues volunteering which is up from 16% to 28%, exceeding our 2025 goal.

A word from our CEO

A word from our CEO

We continue to advocate for change through opportunities such as keynote speeches, encouraging industry collaboration on the value versus cost debate to drive a more sustainable industry.

Finally, we remain focused on our vision to become a sustainable world-class specialty chemicals company. Sustainability was at the core of reshaping Infineum to better enable us to contribute to sustainable mobility and the transition to a low-carbon economy.

02 A message from our Sustainability Director

A message from our Sustainability Director

A message from our Sustainability Director

A message from our Sustainability Director



Maurizio Abbondanza, Sustainability Director, Infineum

As a company whose purpose it is to create a sustainable future through innovative chemistry, our success cannot come at cost to our planet. Our colleagues, customers and communities expect Infineum to play our part in the transition to a low-carbon future.

After years of consistent improvements in reducing the carbon intensity of our operations, in February 2023 we took the next step on our sustainability journey by announcing our net zero ambition.

A message from our Sustainability Director

A message from our Sustainability Director

While 2023 was one of the best years in terms of absolute emission reduction, as you will read in this report the results in 2023 were disappointing from an intensity perspective. The reaction from teams across the business has been extremely positive and I am pleased to say that we now have clear roadmaps to getting back on track and reach our long-term ambitions.

We have continued to strengthen our internal sustainability capabilities and have made significant progress in translating our ambitions into concrete functional goals with clear accountability mechanisms.

Sustainability is an integral part of how we do business at Infineum and I am confident that we can make significant strides forwards in 2024 and beyond. Indeed, we have embedded sustainability thinking and practices into what we do every day.

This includes the completion of lifecycle analysis for all our products to inform strategic decisions, the introduction of carbon pricing in the economics of our projects, working with customers to design and deliver solutions, and engaging with suppliers to drive improvement along the value chain.

There is also more to our sustainability ambitions than decarbonisation. As we evolve, we cannot be complacent regarding our focus to personal and process safety at our sites. It is important that anyone working for Infineum, goes home in the same condition in which they arrived at work.

Beyond safety and ensuring nobody gets hurt, which remains our most important priority, being a sustainable organisation includes focusing on diversity, equity and inclusion (DEI).

A message from our Sustainability Director

A message from our Sustainability Director

This means taking actions to create an equitable and inclusive environment where everyone can flourish and be proud of working for Infineum. This will help us to attract and retain top talent, improve employee morale and productivity, and ultimately lead to better business outcomes.

We will continue to advance and emphasise our strong values and inclusive work environment, showcasing our welcoming culture and opportunities for personal growth, career development and work-life balance.

Sustainability is a big opportunity for value creation, with the potential to bring new sources of revenue and improved supply chain reliability. Innovating to bring more sustainable products to the market will create competitive advantages and help our customers meet their own sustainability goals.

We will need to balance trade-offs between short-term performance objectives and realising our long-term vision. However, with the creative energy of all our colleagues we can make real progress towards creating a more sustainable future.



03 | About Infineum

25 years of excellence, reliability and innovation



The Infineum group of companies was established in January 1999 as a joint venture between ExxonMobil and Shell, bringing together their respective additive divisions to become a world leader in the formulation, manufacture and marketing of additives for the fuel and lubricant industry.

Our achievements are underpinned by rigorous processes that ensure consistency and quality through product development to end delivery. Our technology excellence and collaborative approach has enabled us to develop, manufacture and deliver advanced chemical solutions that meet exacting customer and industry standards and yield superior performance.

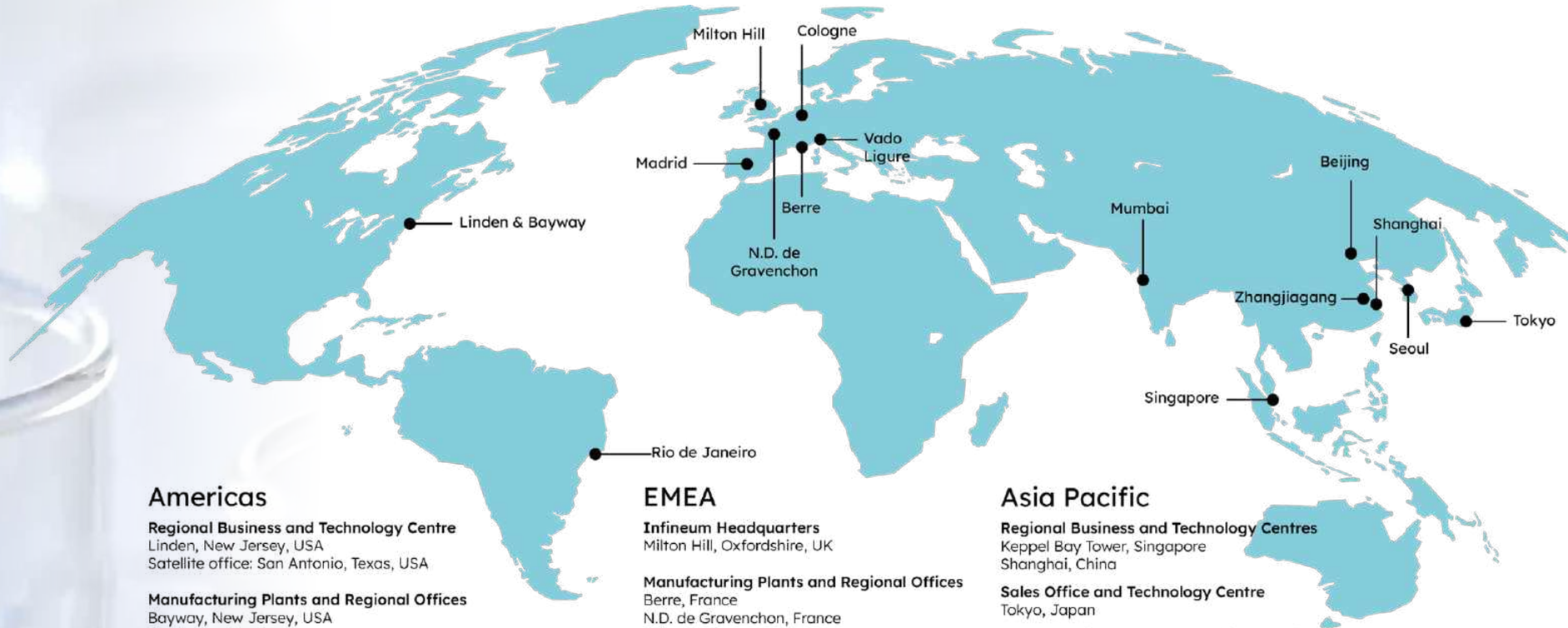
Where we operate



With headquarters in the UK, we have worldwide production facilities and sales representation in more than 70 countries and strategically located business and technology centres in China, Singapore, the UK, the USA and Japan.

We operate six manufacturing plants in New Jersey (USA), Rio de Janeiro (Brazil), Cologne (Germany), Vado Ligure (Italy), Singapore and Zhangjiagang (China) and have two further sites in France (Notre-Dame de Gravenchon and Berre) that are operated by site partners.

About Infineum



Americas

Regional Business and Technology Centre
Linden, New Jersey, USA
Satellite office: San Antonio, Texas, USA

Manufacturing Plants and Regional Offices
Bayway, New Jersey, USA
Rio de Janeiro, Brazil

Sales and Customer Support Centres
Linden, New Jersey, USA

EMEA

Infineum Headquarters
Milton Hill, Oxfordshire, UK

Manufacturing Plants and Regional Offices
Berre, France
N.D. de Gravenchon, France
Cologne, Germany
Vado Ligure, Italy

Sales and Customer Support Centres
Madrid, Spain

Asia Pacific

Regional Business and Technology Centres
Keppel Bay Tower, Singapore
Shanghai, China

Sales Office and Technology Centre
Tokyo, Japan

Manufacturing Plants and Regional Offices
Jurong island, Singapore
Zhangjiagang, China

Sales and Customer Support Centres
Seoul, South Korea
Mumbai, India

Infineum Branch office
Beijing, China



Our purpose, vision and values

Our purpose is to create a sustainable future through innovative chemistry.

We aim to deliver this by generating exceptional value for our customers so that we can succeed together. We are building on our strong foundations in petroleum additives for lubricants and fuels and using our powerful research capabilities around ground-breaking chemistry to develop new solutions for the future.



Our purpose, vision and values

In doing so, we believe it is imperative that we invest in a strong economic, social and environmental future for all stakeholders.

We want to grow our business to target more sustainable markets, segments, and products.

Our vision is to become a sustainable world-class specialty chemicals organisation, helping our customers to meet the challenges of tomorrow, while giving them performance they can rely on today.

Our CARES values and behaviours

Our CARES values and behaviours are at the heart of everything we do and help us to live up to our purpose and create an environment where all colleagues can thrive.

We have five values:



Customer
Our customer's business is our business. We grow sustainably and profitably together.



Ambition
We aim high and have a sense of urgency to deliver beyond our targets.



Respect
We are open, honest, and inclusive. We treat our customers, employees, the communities in which we operate and the wider environment with respect.



Ethics
We value integrity over profit by not only obeying all laws in the countries where we do business, but also, even where the law is permissive, choosing the course of the highest integrity.



Safety
We believe people are more important than anything, and our number one priority is that 'Nobody Gets Hurt' while working for Infineum.

Our value chain







Infineum's technology is often hidden in plain sight, enhancing hardware performance, efficiency and durability in many of the world's most critical mechanical, industrial and transportation applications.

For many years, Infineum has been applying cutting edge chemistry to the problems of friction and wear, while driving innovation across the lubricant and fuels industry. Today, our capabilities are increasingly being called upon to help create a cleaner and more sustainable future.

Our market leading solutions are the result of years of meticulous development built on our leading research and development capabilities. In fact, our technology excellence is backed by more than 1,900 global patents (including applications) and a highly skilled and engaged workforce of around 2,000 people across culturally and geographically diverse teams. We adhere to proven and reliable processes throughout our operations, from product development through to end delivery, that are designed to ensure consistent product quality and supply reliability.

Our value chain









With a network of over 3,000 global suppliers, Infineum has robust supply chains established on the foundation of long-term and strategic partnerships. We also work closely with over 20 external manufacturers, or toll blenders, who deliver our products directly to our customers. These partners are spread across several global sites, ranging from small plants to larger, more strategic sites producing multiple products.

As a strategic collaborator to many Original Equipment Manufacturers (OEMs) in the transportation sector and **through a leading role in certain industry groups**, Infineum has been instrumental in the definition and evolution of many new specifications that have driven, and will continue to drive, improvements in lubricant performance, including lower in-use emissions.

Our value chain

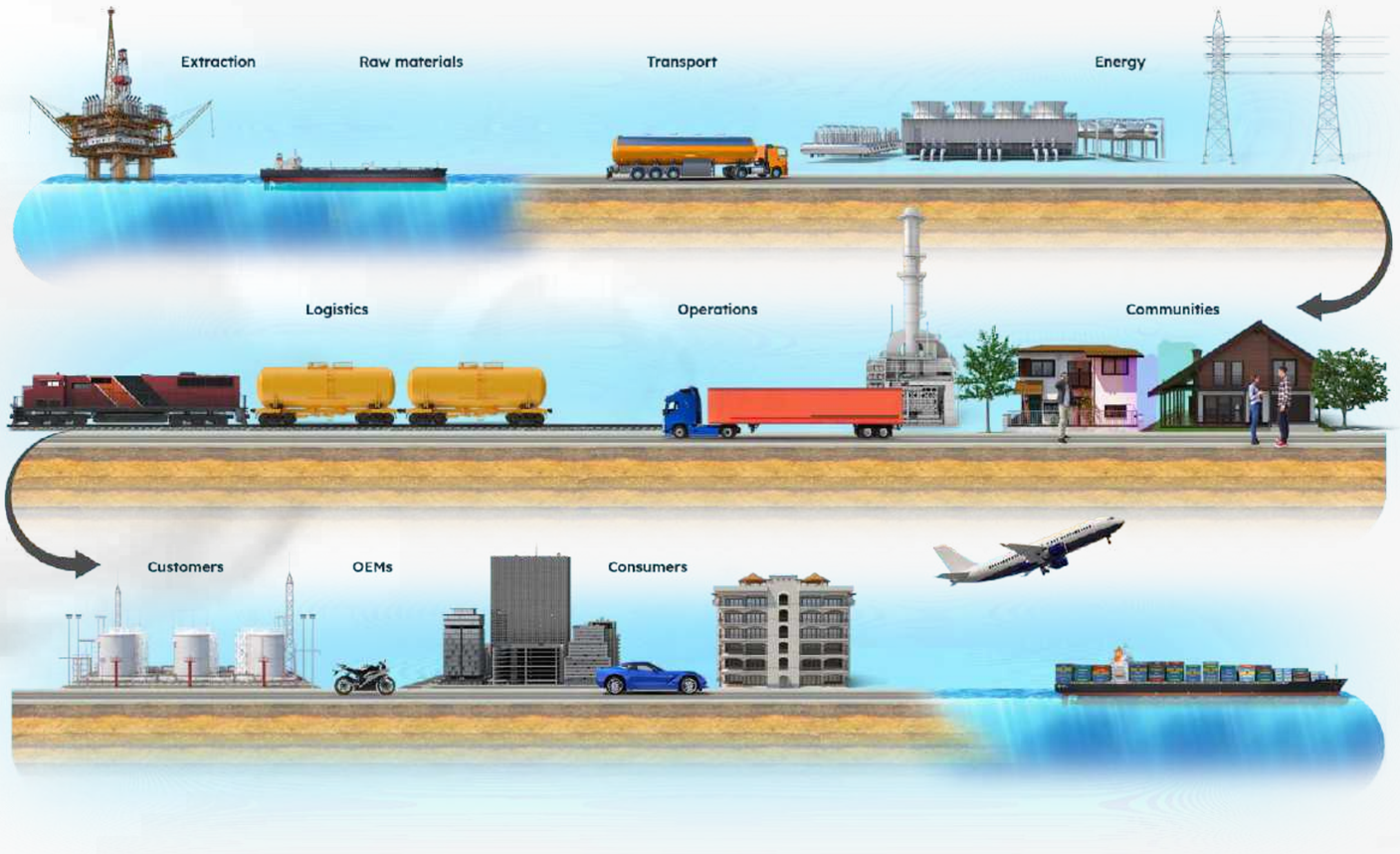
Our technology supports the creation of best-in-class products. Our fundamental technical competencies enable fuels and lubricants to deliver superior fuel economy, reduced emissions, and minimised waste through extended oil drain intervals and prolonged engine life. Our fuel and lubricant additives are sold in more than 90 countries worldwide. Additionally, our emerging portfolio of specialty chemical additives continues to expand across a variety of segments.

We pride ourselves on our strong and collaborative customer relationships and continually work to develop the appropriate capabilities and resources to help them in achieving their business and technical goals. Through appropriate collaborations with our customers, OEMs and industry partners, we are enabling the advancement of low-emission vehicle technologies and supporting the electrification of mobility. We expect these collaborations to continue, as emissions legislation and performance standards become increasingly ambitious.

About Infineum



About Infineum



We work with a global supply chain of base oil producers and speciality chemicals manufacturers.

With leading research and development capabilities and world class manufacturing facilities, we develop and manufacture a diverse portfolio of chemical additives.

Our formulations are blended into finished products that meet the specifications of equipment manufacturers and support a wide range of industrial and consumer applications.

Our strategic vision

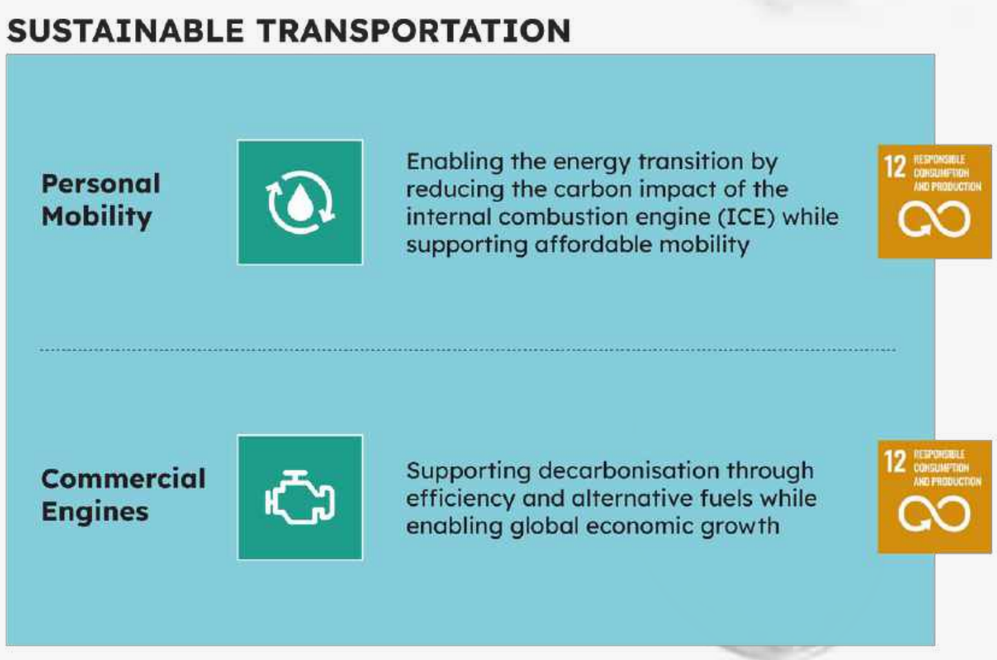
Our vision is to become a sustainable world-class specialty chemicals organisation. This vision is aligned with growing global sustainability aspirations. Our products have consistently played a key role in aiding our industry to save energy, minimise costs and reduce emissions. However, as aging technologies are replaced to address global energy and climate challenges, we need to continue to innovate and develop novel solutions to meet the needs of the future and facilitate the transition towards a low-carbon economy.



Our strategic vision

To help us achieve this, we have refreshed our corporate strategy and reshaped our strategic business units under two commercial towers.

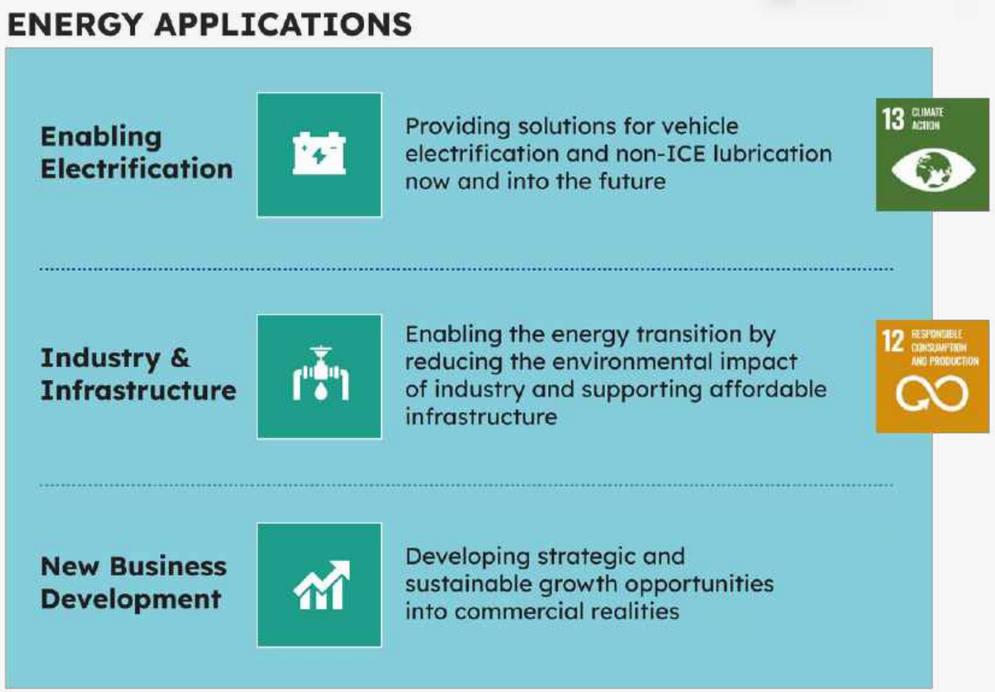
Our Sustainable Transportation tower will support Personal Mobility and Commercial Engines. The focus is on enabling the energy transition by reducing the carbon impact of the internal combustion engine and through the development of alternative fuels.



Our strategic vision

Our Energy Applications tower will drive the organisation's strategic intent to grow existing and new business, including climate-resilient segments, maximising the value of Infineum's unique technology.

This new strategy has sustainability and the energy transition at its core. It is designed to create value across a range of technical and commercial applications that support the objectives of the energy transition. This will allow Infineum to both contribute to, and thrive in, the sustainable future to which the world transitioning.



WE CREATE A SUSTAINABLE FUTURE THROUGH INNOVATIVE CHEMISTRY

SUSTAINABLE TRANSPORTATION

Personal Mobility

Enabling the energy transition by reducing the carbon impact of the internal combustion engine (ICE) while supporting affordable mobility

Commercial Engines

Supporting decarbonisation through efficiency and alternative fuels while enabling global economic growth

ENERGY APPLICATIONS

Enabling Electrification

Providing solutions for vehicle electrification and non-ICE lubrication now and into the future

Industry & Infrastructure

Enabling the energy transition by reducing the environmental impact of industry and supporting affordable infrastructure

New Business Development

Developing strategic and sustainable growth opportunities into commercial realities

Our strategy is designed to support the energy transition

We possess the capabilities to support a multi-pronged approach to decarbonising the automotive industry and transportation sector.

Our products will continue to help passenger cars, trucks and motorcycles to run more efficiently with enhanced fuel economy, reduced emissions, extended engine durability, and at a lower cost to the end user. As we expand into other areas, such as automotive gear oils, where our chemistry can deliver effective solutions to meet market needs, we will also focus on enabling the use of alternative lower-carbon fuels, especially for larger commercial engines in marine or heavy-duty applications.

For smaller vehicles, we will be enabling electrification by formulating and supplying appropriate lubricants and transmission fluids for hybrid and fully electric vehicles. Meanwhile, we will build on our growing presence in the mining and crude oil transportation and distribution sectors to diversify our portfolio of additive solutions to new industrial and consumer applications.

Our strategic business units are supported by our leading technology and operational excellence and by our customer centric approach. Working with, and truly listening to, our customers, drives us towards our purpose of creating a sustainable future through innovative chemistry.



Providing solutions for vehicle electrification

Hybridisation is a key bridging technology for the industry on the road to net zero. To support this transition, Infineum has extensively researched the impact of hybrid operating conditions on lubricant performance and identified performance features that signify robust in-field hybrid capability. The Infineum Hybrid Test protocol evaluates lubricant performance under severe hybrid operating conditions. It provides a ‘beyond the spec’ assessment of hybrid performance for products that meet existing industry standards. The protocol is low-cost and requires less than half a gallon of oil to complete, representing a minimal contribution to waste and emissions during product development.



Providing solutions for vehicle electrification

As the automotive industry further shifts towards electrification, new requirements for vehicle fluids are emerging, from thermal management to help cool down engines or electrical conductivity properties, to gearbox lubrication for fully electric vehicles. We are leading the way in e-fluid formulation and, in 2023, we launched an enhanced portfolio for power transmission fluids, offering solutions for the vehicle's entire driveline.

Supporting alternative fuels

While progress is continuing in the development of electric vehicles, the internal combustion engine will likely remain a big part of the future of mobility in some applications and markets. Here, the development of engines running on fuels such as green hydrogen, ammonia and methanol will be key to decarbonising our transportation systems. However, the combustion of hydrogen for example, as compared to gasoline and diesel fuel, presents a different set of dynamics regarding engine hardware. Lubricant technology will need to be modified to meet the specific needs of these engines and may become critical to their technical and commercial success.



Supporting alternative fuels

In an exciting move forward, in 2023 our Alternative Fuels team has developed lubricant technology for hydrogen-powered engines in the heavy-duty market. Our new technology is now commercially available and will help hydrogen engines improve pre-ignition performance.

Within the marine sector, our marine lubricants and fuels team have pioneered innovative solutions to enhance the application of fuels such as ammonia and methanol. This has enabled the maritime industry to advance on its path towards decarbonisation.



Diversifying into new markets



Infineum is exploring a large pipeline of new business opportunities at different stages of commercial and technical feasibility.

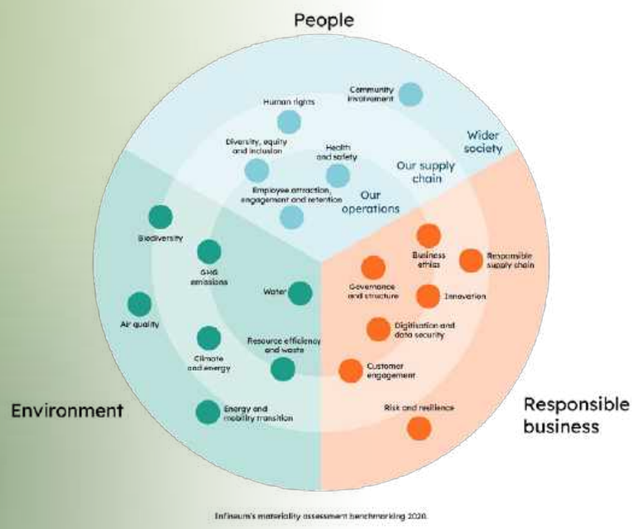
One of the most promising is magneto-rheological fluids, powders and greases that instantaneously and reversibly modify their rheologic properties in the presence of a magnetic field. The potential applications are diverse, including shock absorbers steering, and braking systems for automotive applications, actuators and controllers for gaming and electronics, aerospace, robotics, prosthetics, white goods, civil engineering and more.

We are also using our unique capabilities and proprietary chemistry to develop materials for lithium-ion batteries, helping to increase their energy density and decrease the cost of stored energy. These advancements hold the potential to be scaled up for commercial applications in E-mobility systems or static energy storage in the near future.



04 | Our sustainability strategy

Our materiality assessment



Infineum's materiality assessment benchmarking 2020.



In prior years we have conducted materiality assessments and benchmarking to identify sustainability topics of most concern and importance to our stakeholders. In our 2018 assessment, out of 150 stakeholders providing input, 84% of respondents were internal and 16% were external, comprising customers, OEMs and suppliers. We have also worked with a third party to update and benchmark our materiality assessment.

This process has helped us to identify our priority areas covering the most material topics. We then mapped these topics against the UN's Sustainable Development Goals (SDG). The UN goals where we feel we can make the greatest impact are SDG 3, 12, 13 and 17. We continue to closely follow and engage with customers, peers and industry standards to update and benchmark our materiality assessment on a regular basis to reflect external trends and the evolving expectations of our stakeholders.

Engaging our stakeholders will be a key focus area in 2024 as we plan to renew our materiality assessment.

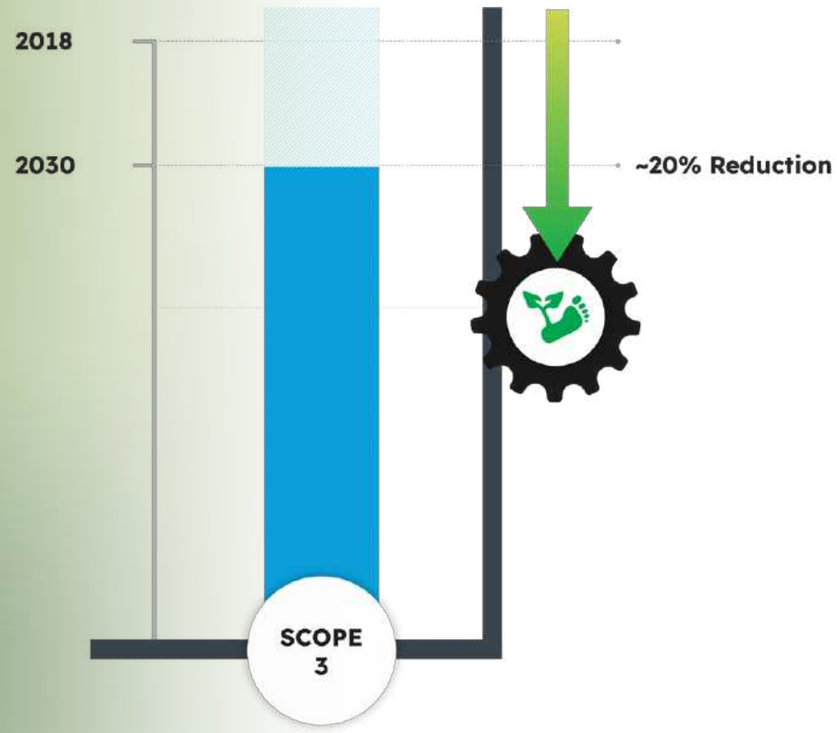


Transitioning to net zero emissions

In 2023, we launched our net zero ambition, which was developed with the goal of supporting the Paris Agreement's greenhouse gas (GHG) emissions reduction pathway.

Powering a Greener Future:
Infineum Shares Sustainability Progress
Read more

Our sustainability strategy



For our scope 1 and 2 GHG emissions, we are aiming to achieve a 50% reduction in emission intensity from our operated assets by 2030, before reaching net zero emissions by 2050. In addition to ongoing operational costs, we have allocated capital investment funding of up to $20 million annually between 2026 and 2030, to support our net zero ambition. These funds will be invested into sustainability projects as and when appropriate. We are also working with energy providers and site partners to improve our energy mix.

Our ambition also extends to our scope 3 emissions, and we have defined a preliminary roadmap to reducing scope 3 emissions by 20% by 2030. This will enable us to develop lower-carbon products and help our customers to achieve their GHG emissions objectives, thereby driving improvements across our value chain.



Nobody gets hurt

Infineum has leading safety performance in the chemicals industry and we believe that anyone working for Infineum should return home at the end of each day in the same state of health and wellbeing as they began.

Safety is ingrained in our values and culture, and recognised, shared and enforced by everyone at Infineum. However, we're always looking to improve and keep safety in focus. Therefore, if an injury does occur to anyone working for Infineum, we investigate fully to understand what happened, identify the root causes and put in place mitigating actions to minimise the risk of it happening again. We believe that a working environment where nobody gets hurt is right and achievable and we will not be satisfied until we have achieved this.

Respecting nature

Our commitment to zero harm extends to the environment in which we work. All our global manufacturing sites have achieved ISO 14001 certification. Infineum is committed to the safe management and handling of chemicals throughout their life cycle and our target every year is to achieve zero environmental incidents throughout our operations. We strive to minimise the pressure on natural resources through resource efficiency practices. Local water withdrawal and waste generation targets have been set for each of our sites. We have also carried out cradle-to-gate **life-cycle assessments on our entire product portfolio,** the outcomes of which will be used to inform product development decisions and minimise the environmental impacts of our products.

Championing diversity, equity and inclusion (DE&I)

We value all aspects of diversity - visible and invisible.

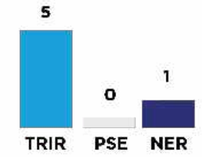
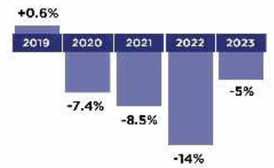
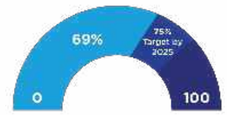
We want every colleague to be themselves; to feel valued, have their voice heard, and have equal opportunity to reach their highest potential. We want to reflect our communities and markets, enabling all colleagues to work and develop in a safe and respectful environment and maximising the value that is created by our diversity. We have set ourselves ethnic and gender representation ambitions for senior roles. We have local DE&I champions all around the world and they play a key role in helping to make DE&I come to life at all our sites. They are supported by executive DE&I sponsors who help to formally embed DE&I throughout the organisation.



Our sustainability scorecard

Our sustainability scorecard comprises six performance indicators that we use to track our performance up to 2025. We will refresh our materiality assessment in 2024 to define our objectives for 2030 and beyond.

Our sustainability strategy

	Goal	2025 Ambition	2023 Progress
Safety	Zero harm to our people and the environment	TRIR + PSE + NER = 0	
Sustainable products	Integrate sustainable design solutions into our product development processes	Integrate sustainable criteria into 100% of our new product developments	
Sustainable supply chains	Collaborate with our suppliers to accelerate environmental and social improvements across the value chain	>80% relevant vendor spend covered by sustainability assessments	
Sustainable operations	Reduce our impact on climate and resources in our operations	Carbon emission reductions >20% per tonne of product compared to 2018	
Colleague engagement	Be an excellent employer	>75% colleague engagement	
Community engagement	Deliver a positive impact in the community where we operate	>25% of colleagues volunteering (global STEM programme or local initiatives)	

Engaging our industry stakeholders

Our commitment to sustainability extends beyond our operational boundaries. We seek to have influence in our industry and to establish collaborative partnerships with government organisations, civil society, and other companies to share knowledge and develop innovative solutions that create sustainable value.

In 2023, we have been very active with all industry stakeholders to create opportunities for collaboration and partnership. This has led to positive and fruitful engagement with OEMs, customers and research bodies such as the MariNH3 consortium that Infineum is part of.

We are also actively involved in trade associations, taking a leading role in driving improvements in product performance standards as our industry evolves through the energy transition.

In addition, through our membership in the World Business Council for Sustainable Development (WBCSD), we engage with business sustainability leaders, both from within and outside our industry, and contribute to the evolution of corporate sustainability best practice.



Infineum Asia Pacific Sales Director John Hong welcoming delegates at Infineum customer engagement event held in Singapore.

Through a strong presence at industry events, we are frequently leading discussions on sustainability topics. Some of the events that we attended in 2023 include the **15th International Automotive Powertrain Technology Congress**, China's most influential e-powertrain technology event, the **International Symposium on Fuels and Lubricants in Delhi**, and Brazil's first ESG Energy Forum.

Our global customer engagement event was relaunched in 2023 as a series of global events to facilitate the sharing of knowledge and deep discussion around the key drivers within our industry.

Customers, OEMs, lubricant marketers, and base stock suppliers are invited to attend and hear from expert colleagues and external partners. The new format takes a forward-looking view to emerging opportunities, from electrification to advanced internal combustion engine technologies, providing a global and balanced perspective on the outlook for the transportation industry as we move towards a lower-carbon future. Over the calendar year, we estimate that these events reached over 2,000 stakeholders globally.

05 | Sustainable operations

Environmental management

Infineum is committed to operating in a safe, secure, reliable, and environmentally sound manner. Our approach to environmental management is defined by our Operations Integrity Management System (OIMS), which has been a central part of our strategy since Infineum started in 1999. It continues to ensure that environmental protection is incorporated into our business planning processes and project appraisals.

OIMS covers the following elements:

- identifying, assessing and managing significant environmental aspects, including carbon, energy, water, and waste.
- proactive measures to prevent environmental incidents and releases.
- continuous improvements in environmental performance.

Our commitment to zero harm extends to protecting nature and we aim for zero environmental incidents in our operations.

Furthermore, we have set environmental targets for each of our manufacturing plants and business and technology centres on carbon emissions, energy, water, and waste.

Environmental management



Infineum Singapore plant receives Responsible Care Award.

The performance of each site is monitored on a monthly basis through an interactive sustainability dashboard that is accessible to all colleagues.

All our global manufacturing sites maintain ISO 14001 certification.

Infineum has also signed the Responsible Care Global Charter, the chemical industry's global unifying commitment to the safe management and handling of chemicals.

For the third consecutive year, our Singapore plant received recognition for six of seven applicable codes of practice during the annual Responsible Care Award ceremony. This achievement rewards the team's commitment to health, safety and environmental management practices.

Energy and climate

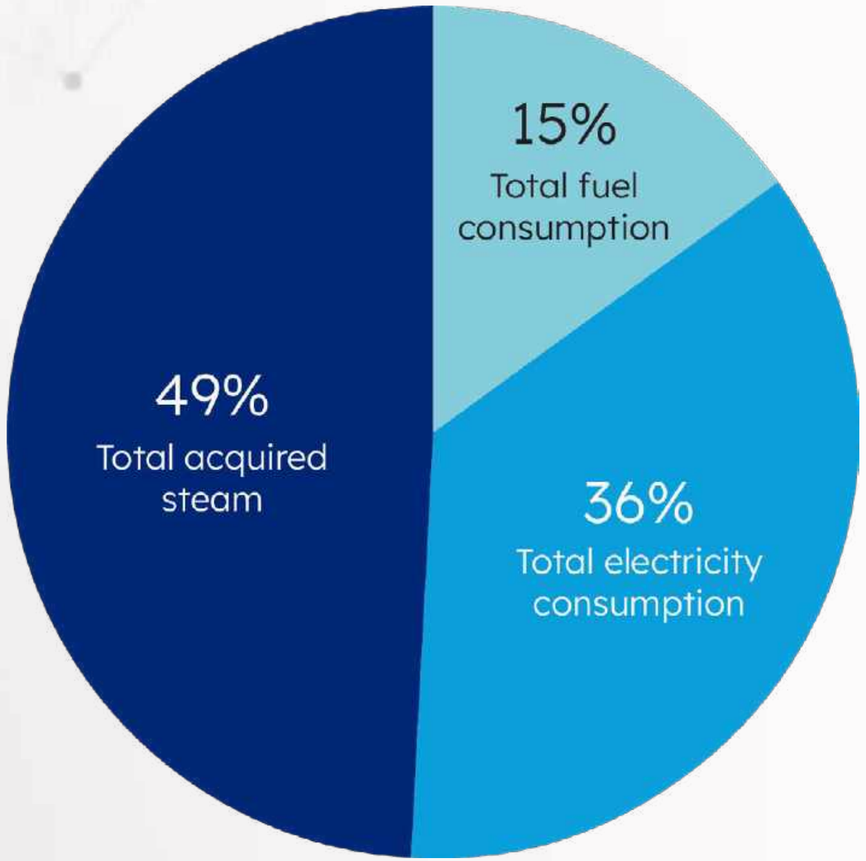
We are committed to reducing GHG emissions across our operations, by increasing energy efficiency and using more renewable energy. Our manufacturing plants are energy intensive, and the high temperatures required in our production processes necessitate the use of steam for heating.

In recent years, we have implemented measures to make our manufacturing plants run more efficiently, including heat integration, unit and equipment upgrades, temperature controls on tanks, LED lighting and many other energy conservation techniques. We also introduced an internal proxy cost of carbon to inform all capital investments and steer our decarbonisation efforts.

However, our energy use is not linear with production volumes as our manufacturing plants have a significant fixed portion of consumption to remain operational. A drop in production volumes in 2023 has therefore resulted in a notable increase in the emission intensity of our operations, despite absolute emissions reaching their lowest levels since 2018.

Sustainable operations

2023 energy mix



Sustainable operations

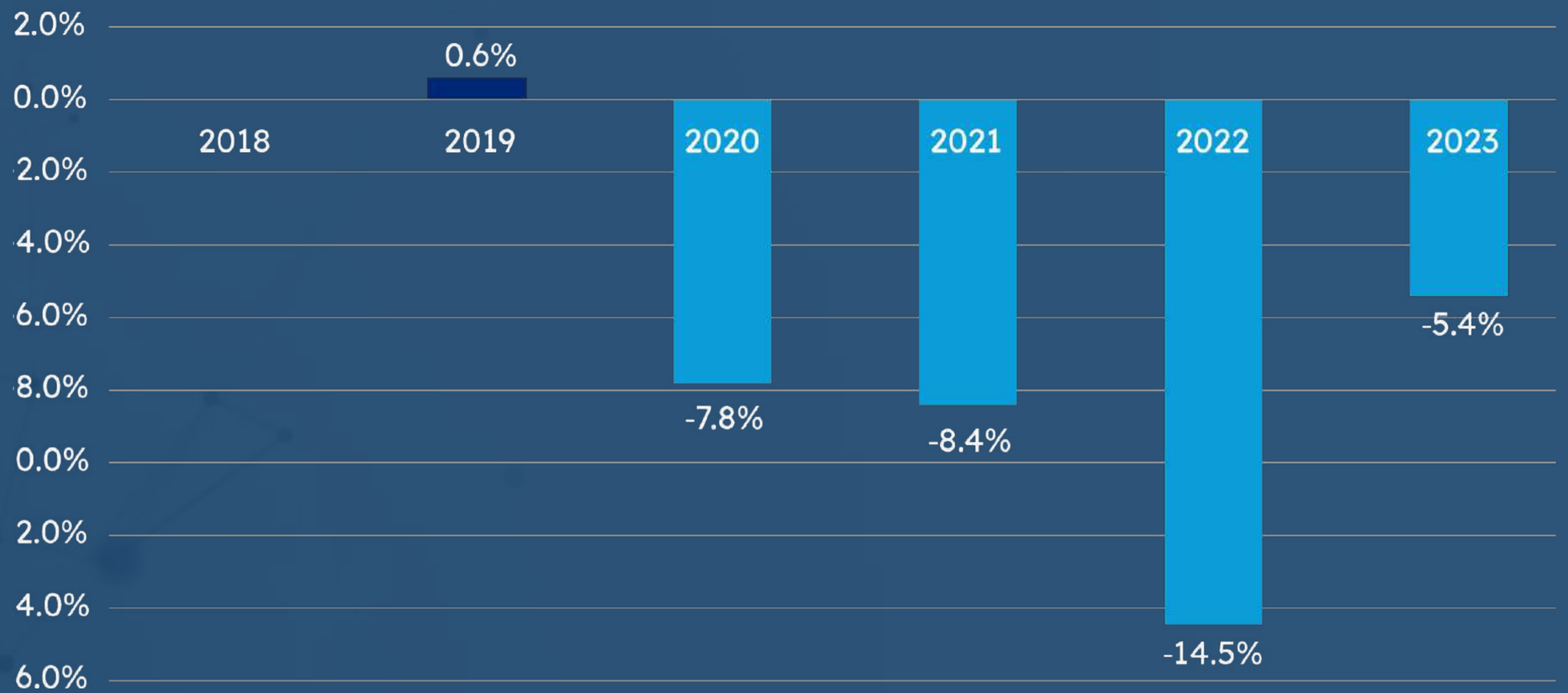
In response to this trend, decarbonisation workshops were held at every manufacturing site in the second half of the year to identify further emission reduction and energy conservation opportunities. We are trialling a number of initiatives, including the reduction of tank temperatures in blending units, retrofitting equipment such as burners and repairing steam traps.

Our Bayway plant identified and repaired over 250 steam leaks and 150 steam traps in the fourth quarter of 2023, which we expect to result in significant savings in 2024. In Zhangjiagang, several energy efficiency projects have been completed, including optimising the use of cooling water pumps and upgrades to air compressor systems.

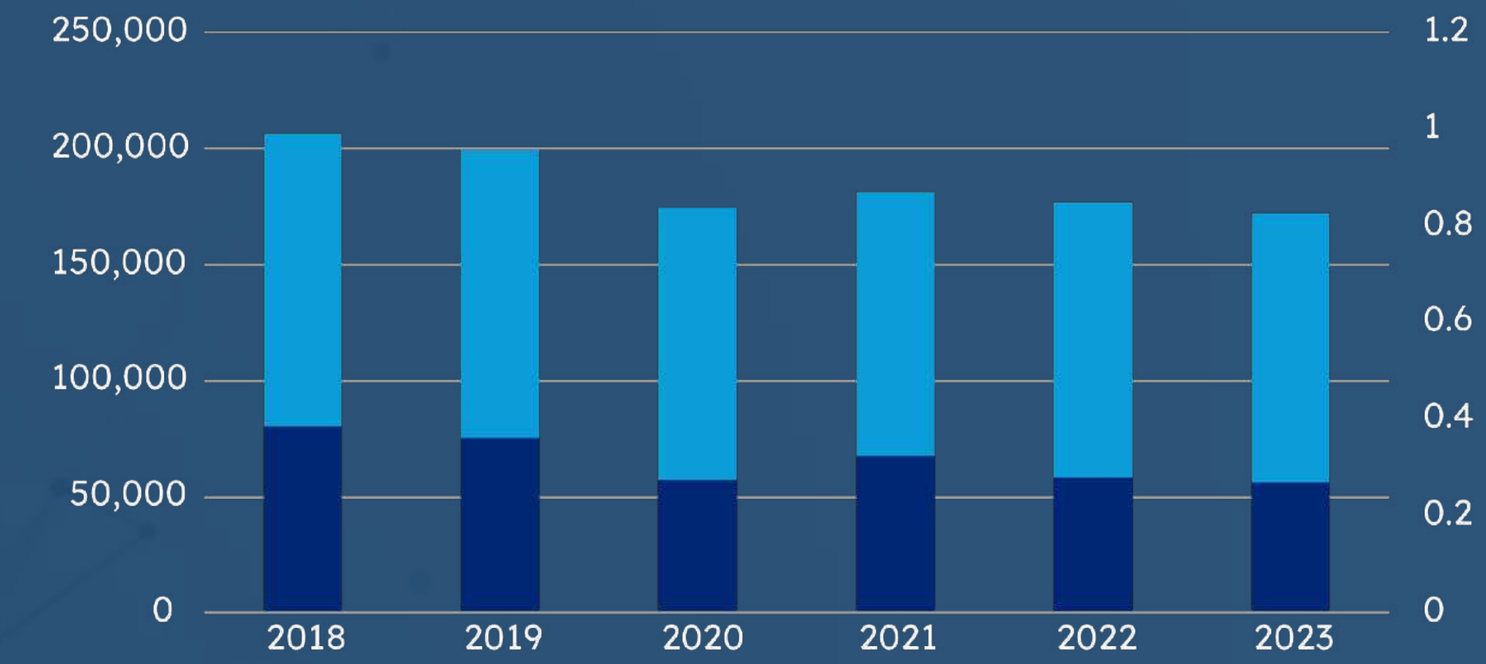
At our non-operated plant in Berre, steam valves have been replaced to eliminate leaks. A trial is ongoing in our Vado site to reduce the temperature of storage tanks to optimise energy use. Our plant in Singapore has focused on controlling refrigerant use and minimising losses, through a combination of facility improvements, and new production and maintenance strategies.

We have also been increasing engagement with our site partners and energy providers to improve the carbon intensity of the energy that we use. Our plant in Cologne is collaborating on a plan to source electricity from an expanded solar farm and steam from a new hydrogen boiler.

Emission intensity



Gross scope 1 and 2 emissions



	2018	2019	2020	2021	2022	2023
Scope 2 (Metric Tons CO2e)	126,000	124,000	117,000	114,000	119,000	116,000
Scope 1 (Metric Tons CO2e)	80,400	75,200	57,500	67,500	58,000	56,300

Breakdown of energy and emissions performance at our operated manufacturing plants

Site	Gross energy consumption (GJ)	Absolute scope 1 and 2 GHG emissions (mtCO2e)
Rio de Janeiro	55,700	2,730
Bayway	870,000	50,600
Cologne	544,000	31,200
Vado	722,000	38,400
Singapore	515,000	34,900
Zhangjiagang	65,400	7,800

Water and waste

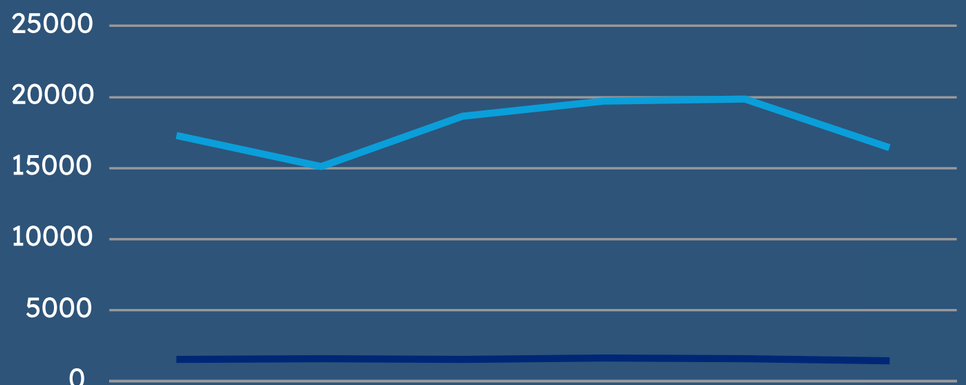
Environmental goals covering water use and waste generation are set at each of our sites, including manufacturing plants and business and technology centres. These goals are monitored on a monthly basis throughout the year. Improvement plans will be set for sites that missed their goal in 2023.

	2020	2021	2022	2023
% of sites meeting goals for water	38%	77%	69%	62%
% of sites meeting goals for waste	38%	62%	54%	62%

Water

Water is crucial to our business, and with most of our plants located in close proximity to the sea or to rivers, we take a stewardship approach to water management at all our sites. Each manufacturing plant upholds strict processes to ensure compliance with regulatory requirements and laws. We seek to limit our use of freshwater as much as possible and the majority of the water we withdraw comes from the sea and is used predominantly for cooling and firefighting. Under normal operating conditions this water can be safely returned to the sea with minimal losses. In 2023, an environmental protection project has been completed at our plant in Vado to reuse wastewater in one of our treatment units.

Total water withdrawal



	2018 - Water use (Megalitres)	2019 - Water use (Megalitres)	2020 - Water use (Megalitres)	2021 - Water use (Megalitres)	2022 - Water use (Megalitres)	2023 - Water use (Megalitres)
Total water	15,700	13,500	17,100	18,100	18,300	15,100
Total freshwater	1553	1592	1553	1618	1561	1429

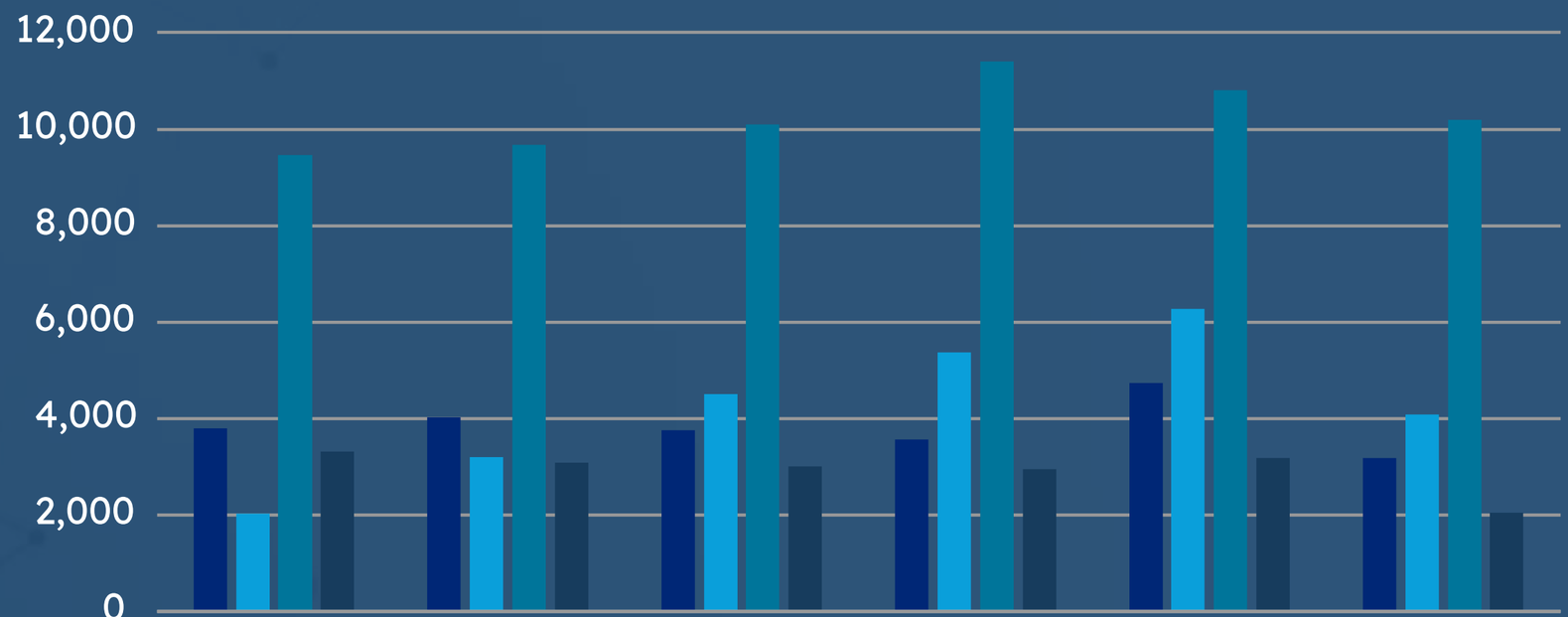
Waste

We aim for the highest standards in waste reduction, and all sites are working to reduce hazardous waste and waste to landfill. We require waste to be disposed of in a safe and environmentally sound way. Our waste management programme is underpinned by an annual external audit of environmental data which has led to improvements in data quality and reliability.

We continue to implement initiatives that focus on both waste reduction and cost savings. A trial to reduce the use of filter aid in the thermal dispersant unit at our Berre site is expected to save 150 tonnes of waste material per year.

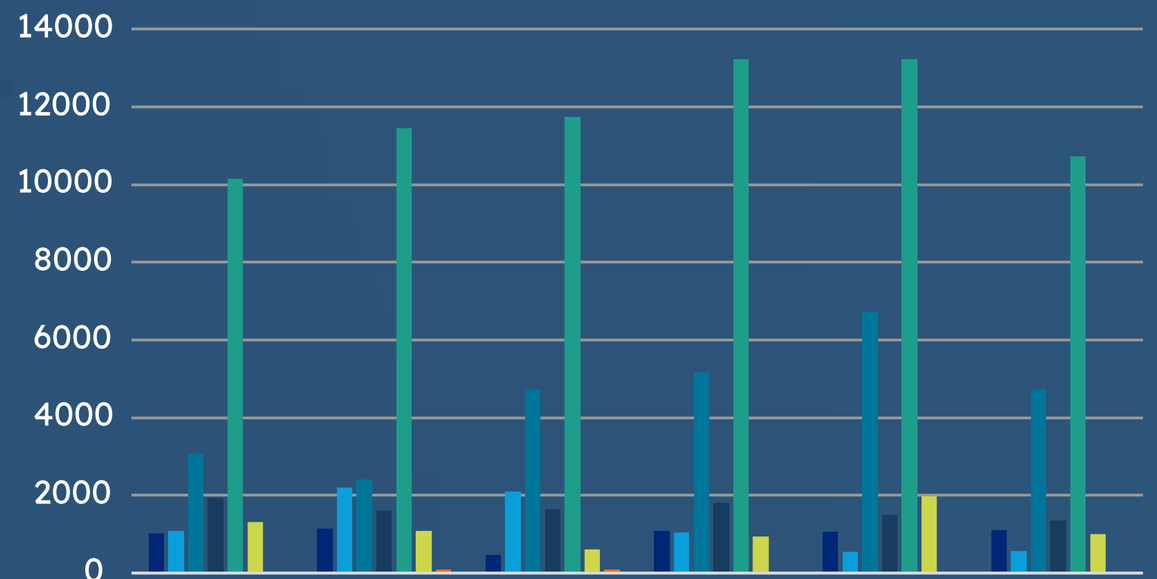


Total waste by waste category



	2018 Waste generated (mt)	2019 Waste generated (mt)	2020 Waste generated (mt)	2021 Waste generated (mt)	2022 Waste generated (mt)	2023 Waste generated (mt)
Solid Non-hazardous	3,790	4,020	3,750	3,570	4,740	3,180
Liquid Non-hazardous	2,020	3,200	4,500	5,360	6,280	4,080
Liquid Hazardous	9,460	9,680	10,100	11,400	10,800	10,200
Solid Hazardous	3,310	3,090	3,010	2,940	3,180	2,040

Total waste by disposal method



	2018 Waste generated (mt)	2019 Waste generated (mt)	2020 Waste generated (mt)	2021 Waste generated (mt)	2022 Waste generated (mt)	2023 Waste generated (mt)
Biological treatment	1029	1153	455	1083	1070	1103
Incineration without energy recovery	1094	2202	2108	1045	551	564
Landfill	3072	2404	4728	5166	6730	4731
Water Treatment	1940	1600	1636	1803	1490	1345
Incineration with energy recovery	10142	11445	11745	13231	13237	10729
Recycling	1303	1091	616	932	1971	1005
Reuse	0	93	83	4	1	0

06 | Sustainable products

In-use benefits

Our fuel and lubricant additives provide enhanced fuel economy performance, while delivering optimal wear protection to engine hardware. They are a critical enabler to minimise the impact of global transportation and power generation during the transition phase to a lower carbon future and will continue to play an important role in the coming decades.

As regulators the world over introduce ever tightening emissions regulations and OEMs make firm net-zero and sustainability commitments, there is a growing need for cleaner and greener vehicle technologies. This is driving hardware changes to meet the latest emissions regulations and a preference for lower-viscosity oils to achieve fuel economy improvements. We are collaborating closely with our value chain partners to develop solutions that will continue to help engines operate more efficiently, enabling improved fuel economy, emissions system protection and overall resource optimisation.

Increasing oil drain intervals

Engine lubricants degrade over time and the oil's ability to provide adequate lubrication, reduced friction and heat dissipation is diminished. Our additives improve oxidation control and neutralise acids formed during combustion. This extends oil drain intervals, which reduces downtime and operating costs for vehicle owners and engine maintenance companies, means less oil gets used and reduces waste.

Improving fuel economy and energy efficiency

The fuel efficiency of a vehicle is affected by the efficiency of its powertrain, which transfers power from the engine and delivers it to the road surface, water or air. Our lubricant and driveline additives make powertrains more efficient, thereby enhancing the vehicle's fuel economy performance. Our marine fuel additives also enable enhanced fuel economy, reduced fuel wastage and lower emissions output.

Extending engine life

Our lubricant products are designed to reduce engine friction and improve wear protection, resulting in improved engine durability and prolonged life. This helps to reduce waste and raw material consumption by keeping existing vehicles in operation for longer and minimising hardware replacement.

With oil drain intervals continuing to lengthen, there's an additional need to ensure that oils can protect the engine throughout the lifetime of the vehicle.

Our additives also reduce wear in critical engine components, while our products help to extend the longevity of after treatment systems that remove or reduce the harmful by-products of engine combustion, especially particulate matter, hydrocarbons and nitrogen oxides, thereby reducing their impact on air quality.

Compatibility with more sustainable feedstocks

Our fuel additives are formulated to enable refiners to incorporate more sustainable content into their fuels portfolio by mitigating cold flow and lubricity debits.

This gives our customers the flexibility to switch to alternative lower-carbon fuels, such as circular or renewable base oils, whilst meeting performance requirements for a wide-range of end-use applications.

In our lubricants range, in 2023, we commercialised a pioneering new lubricant additive package, **Infineum P6895A**. As well as meeting stringent performance standards, this new product was developed for deployment in base stocks derived from renewable sources.

Product stewardship

We ensure that our products remain safe and compliant with global regulations. We provide safety, health, environmental and regulatory information on our products so that they can be handled safely by our colleagues, service providers, commercial partners and customers.

Going beyond legislative obligations and as part of responsible care of our products throughout their life-cycle, we also routinely screen for the presence of substances of concern (SOC). These are substances which are, or are likely to become, restricted or banned by regulatory action or face pressure for substitution, typically due to certain intrinsic hazard properties or risks of adverse effects to human health or the environment. All applications of SOCs are assessed to ensure their use is safe and, where possible, we seek to substitute them for safer alternatives.

REACH

The European Union's REACH (the Registration, Evaluation, Authorisation and restriction of Chemicals) regulation has become the model for tighter control of chemical use. It has required many years of testing and assessment to complete all necessary substance registrations and ensure that our products can be used safely.

Since the end of the initial REACH registration phase in 2018, Infineum continues to invest significant resources in ensuring ongoing compliance with REACH as well as other chemical safety initiatives, including equivalent regulations in Korea, Taiwan and Turkey.

Minimising product footprint

Applying life-cycle thinking to our product portfolio

The products and components we develop are created with sustainability in mind and we are committed to integrating sustainability throughout our value chain, from the extraction of raw materials to the end-of-life treatment of our products.

This holistic approach is integrated into how we manage our product portfolios and enables our technologists and product formulators to systematically assess a potential product's impact by taking sustainability criteria, risks and opportunities into consideration. We are continuing on track to meet our 2025 ambition of assessing 100% of new Infineum products against sustainability criteria.

In 2023, we completed our first portfolio sustainability assessment. The results of this assessment will be used to set improvement goals for the impacts of our products, make strategic decisions on technology investments, and ultimately help to bring new innovative products to the market.

Optimising raw material selection

We work closely with our suppliers, customers, and OEMs to improve the total impact profile of our products by looking for raw material substitutions that achieve the right balance of lower product carbon footprint, in-use performance and cost competitiveness.

For example, we are continuing to incorporate circular material in key products through the use of re-refined base oil (RRBO) as a diluent in components. Re-refining requires less energy than is needed for refining crude oil to produce base oil and it also means less non-renewable virgin oil is consumed.

This results in reduced waste and lower carbon footprint.

We are now focusing on controlling the cost of these initiatives to ensure that they are commercially viable, scalable and affordable to the end consumer. At the same time, we are developing chain of custody solutions that will enable us to pass on more value to our customers and help them to achieve their own sustainability objectives.

07 | Sustainable supply chain

Driving sustainability through procurement

Infineum has strong supply chains in place, based on long-term partnerships and supported by a robust integrated management system to ensure that business relationships with third parties are aligned with all applicable laws and the highest standards for business ethics, health, safety and environmental protection, from the supply of raw materials to transportation and distribution services.

Our suppliers are a central part of our sustainability strategy. We aim to collaborate with our off-site processors, custom manufacturers and suppliers to drive sustainability improvements. We evaluate our suppliers using the independent EcoVadis rating on a broad range of topics, including environmental management systems, human rights and sustainable procurement practices.

This is helping us to understand risks and opportunities in our supply chain, find opportunities for collaboration, and ensure that our supplier base understands our business and sustainability strategy. The share of 2023 supplier spend that was covered by sustainability assessments has risen to 62%, up from 58% for 2022, and our aim is to reach 80% of relevant spend by 2025.

We have integrated sustainability criteria into key procurement processes and continue to engage key suppliers to drive improvements. Product carbon footprint data is requested as part of our tendering process and we have collected data for over 50% of raw material suppliers by volume. We are working with our suppliers to improve the quality and coverage of data through regular steering team meetings and business performance reviews.

Managing upstream environmental impacts

We are working with suppliers to improve our understanding of upstream environmental impacts, strengthen our product life cycle assessments and gain more visibility over our scope 3 carbon footprint.

This will act as a basis to drive further collaborations to reduce negative environmental impacts in our supply chain, develop more sustainable products, optimise our production processes, and possibly even to establish new business models. For example, we are exploring options to substitute some of the raw materials we use for lower-carbon and circular materials such as re-refined base oils.

Efficient transportation and logistics

Our Transportation Management System is designed to streamline the shipping of our products and components, providing visibility into day-to-day transportation operations, compliance and documentation, and ensuring timely delivery of freight and goods. It also allows us to gather data to monitor and improve the carbon footprint associated with our global supply chain operations. As a result, we have increased focus on different supply models including payload optimisations and switching to more sustainable forms of transportation to reduce carbon emissions.

Safeguarding human rights in our supply chain

Infineum supports the protection of and respects universal human rights, including but not limited to those of our colleagues, the communities in which we operate, and the parties with whom we do business, and condemns human rights abuses of any kind.

We believe that human trafficking, modern slavery, and all other humanitarian crimes should not be tolerated in any part of our business or supply chain. In this regard, we endeavour to ensure that our company and supply chain adhere to the highest ethical standards, and that our contractors are treated fairly.

Our Code of Conduct sets out our position on human rights and modern slavery through our Statement on Human Rights and Modern Slavery, to which Infineum colleagues and suppliers are expected to adhere at all times.

Our expectations for suppliers to adopt and maintain a similar approach to human rights and modern slavery is clearly communicated via our Supplier Code of Conduct and online Supplier Portal, as well as through annual written reminders and contractual obligations.



08 Safety



A comprehensive approach to safety

‘Nobody gets hurt’ remains one of Infineum’s core values.

We believe that anyone working for Infineum should return home at the end of each day in the same state of health and wellbeing as they began it, and that all incidents, injuries, and occupational illnesses are preventable. Our goal is to ensure zero harm to our people and the environment.

We follow a tried and tested system to successfully manage workplace health, safety, and wellbeing. Our Operations Integrity Management System (OIMS) is applied at all our sites, and covers all colleagues and contractors, ensuring that hazards are systematically identified, evaluated, and controlled, and that associated risks are managed in compliance with health, safety, and environmental laws.

It is the responsibility of each of our sites to make sure that OIMS is operating efficiently and effectively. This is supported by regular assessments of our OIMS systems alternating between teams comprised of colleagues who work on the specific site (internal assessment), or by global colleagues and subject matter experts supported by colleagues from one of our parent companies (external assessment).

Safety



Findings or actions arising from these assessments are used to continually improve our systems, mitigating where necessary and simplifying where required. OIMS is certified equivalent to the international ISO 45001 standard for health and safety. It defines our way of working and is at the core of everything we do.

We believe our colleagues' health is paramount, so we provide access to occupational health professionals who conduct regular medical reviews specific to colleague work activities and their legal responsibilities.

Additionally, to ensure our colleagues go home in the same condition they arrive to work, regardless of whether working onsite, travelling on business, or visiting third party locations, everyone is empowered by our Chief Executive Officer to stop work if they feel unsafe at any time.

Safety



Our focus on safety extends beyond our own operations and we make sure that our external manufacturing sites follow our quality processes and health, safety, security and environmental (HSSE) standards.

We ensure that all of our suppliers and service providers are aware of the safety standards required by Infineum and that they are subject to safety and environmental obligations commensurate to the products and services that they are providing. We also seek to share safety insights and best practice with customers, OEMs and industry peers. An example of this is a series of engineering and administrative mitigations for the safe handling of ammonia fuel that were designed to ensure safe environments for our operators in both bench and engine tests.

Our on-site operators must have a comprehensive understanding of the associated risks and be equipped with essential safety protocols to troubleshoot any potential technical issues that may arise during the operation of test rigs and other on-site operational facilities.



Embedding our safety culture

A robust safety culture is embedded into our everyday processes and is maintained through strong safety leadership, clear messaging and metrics that focus on incident prevention.

Whilst our sites have teams of HSSE professionals supporting their activities, everyone at Infineum is required to take responsibility for protecting people and the environment and all colleagues are required to set their own individual safety goals every year that become part of their annual performance review. We encourage employees and contractors to challenge unsafe behaviour, and call attention to safe behaviour. If they see something, we expect them to say something and report it as a ‘Behavioural Based Safety Observation’ (BBSO) through an on-line portal.

Our safety culture is embedded from day one, starting with our site safety inductions, then progressing depending upon the role of the colleague or contractor. All employees are required to undertake initial HSSE training on joining Infineum, and thereafter to undertake regular scheduled HSSE refresher training. Hazard identification is crucial, it enables us to provide robust risk assessments and job safety analysis (JSAs), supported by strong mitigating actions. Should an incident occur, we conduct thorough investigations to identify the root cause and apply the necessary actions. All actions, whether arising from a risk assessment, OIMS assessment or incident investigation, are tracked through to a timely completion.

Safety incidents and relevant learnings are shared with the entire organisation through monthly HSSE reports and quarterly functional safety meetings. Furthermore, we listen to our colleagues on safety related matters, analysing feedback from safety standdowns and global meetings, incorporating learnings into our global systems to support our continuous improvement journey.



Zero harm to our People and the Environment

Our strong safety culture and management systems enable us to deliver excellent safety performance. Infineum is a top performer on personal safety results, for both our colleagues and contractors, appearing in the top 10% of the chemical industry. However, we always aspire to do better and with our 2025 ambition of ‘zero harm’, we are aiming for zero personal, process and environmental incidents in our operations.



Infineum Japan celebrates 9,000 days of safety excellence

Safety

Recordable Injuries

	2018	2019	2020	2021	2022	2023
Colleagues						
LTI	0	0	1	1	1	1
RWC	0	0	0	0	0	0
MT	0	1	0	0	0	2
Contractors						
LTI	1	1	1	1	0	1
RWC	1	0	0	1	0	1
MT	0	2	0	0	0	0
Total Infineum						
LTI	1	1	2	2	1	2
RWC	1	0	0	1	0	1
MT	0	3	0	0	0	2

LTI: Lost Time Injury; RWC: Restricted Work Case; MT: Medical Treatment

Safety



Total Recordable Injury Rate (per 200,000 working hours)

	2018	2019	2020	2021	2022	2023
Colleagues	0	0.05	0.05	0.05	0.05	0.14
Contractors	0.21	0.26	0.12	0.21	0	0.19
Total Infineum	0.07	0.13	0.07	0.10	0.03	0.16

Notifiable Environmental Releases (NER)

	2018	2019	2020	2021	2022	2023
Title V	1	2	2	1	1	0
Total NER	1	2	3	4	1	1



09 | Colleague engagement



Being an excellent employer

At Infineum, our people are at the heart of our success. We are committed to fostering a safe and inclusive workplace that enables our colleagues to thrive, both personally and professionally.

We offer tailored training programmes to support this, including unconscious bias training for all Infineum colleagues and inclusivity training for leaders.

Our population

Our ambition is to maintain a diverse organisation where everyone feels respected and supported. In 2023, our population consisted of colleagues from over 40 nationalities and diverse cultural backgrounds, with a well-balanced age distribution.

We believe this diverse demographic brings different perspectives and ideas enabling us to make the best decisions for Infineum and our customers.

Age distribution

Age	Percentage
20 to <30	12%
30 to <40	31%
40 to <50	25%
50 to <60	24%
≥ 60	8.4%

Prioritising wellbeing



Infineum colleagues connecting with nature to balance mental and physical health

The health, safety and wellbeing of our colleagues is our highest priority. We understand that performance, creativity and innovation flourish in an environment where people feel safe, confident and supported.

Our online Global Wellbeing Hub provides resources to help colleagues nurture their own wellbeing and support one another. In 2023, we continued to promote various wellbeing tools and our local sites organised activities to strengthen the social bonds between colleagues.

Recognising the economic challenges faced by colleagues in 2023 due to rising inflation and the higher cost of living, we took proactive steps to support the colleagues most likely to be impacted. In 2022, we provided a resilience bonus to some colleagues to help mitigate the impact of high inflation. In 2023, we implemented further pay actions to improve the purchasing power of colleagues at the lower end of our pay distribution in places where inflation was particularly acute.

Colleague engagement

Inclusive policy for new parents

One of the significant moments in our colleagues' lives is welcoming a new child into their family. We strive to be an inclusive organisation that provides the necessary support and adjustment period especially in locations where statutory parental leave is not particularly generous. Since 2019, all colleagues have been entitled to a minimum of four weeks paid parental leave for birth mothers, fathers and adopting parents, even in locations where local law or practices do not require it.



"The beginning of parenthood is not an easy task from navigating through sleepless nights, strictly abiding to feeding schedules or even close monitoring of my little one when he is sick. These would not have been easy without the generosity of Infineum granting 4 weeks of global parental leave which has been really useful especially with the flexibility of using over a period of one year. Coupled with my supportive leader and team members who are willing to stand-in, I am honored to be part Infineum at the point of starting a family"

Muhammad Muhaimin Bin Amdan
Performance Testing Coordinator



Listening to our colleagues

Open communication and feedback are essential for creating a positive work environment.

Every year, we conduct a survey of our colleagues to measure how they feel about working for Infineum. Our ambition is to achieve a colleague engagement score of more than 75% by 2025.

In 2023, the engagement score rose from 66% in 2022 to 69% reflecting the cumulative impact of our work environment and specific initiatives at a global, regional, and local level.

We have further formal channels for colleagues to share their views and concerns. In 8 out of the 11 of the countries we are located, we have trade unions or recognised employee representative bodies.

Globally, 43% of our colleagues are under formal collective bargaining agreements. Additionally, we have a global reporting hotline that allows colleagues to anonymously report incidents or concerns relating to laws, regulations or violations including discrimination or harassment. In 2023, we received six reports of code of conduct violations, all of which were investigated promptly and thoroughly.

Developing and retaining talent

Infineum is committed to developing our talented colleagues. We aim to provide stretching roles and opportunities for colleagues to make a real impact to our business and develop to their full potential.

We encourage ongoing conversations with leaders about work progress, performance and development, underpinned by annual performance reviews and regular personal development planning mechanisms. This allows colleagues to discuss their skills and career development, and to identify the support and resources they might need to help achieve their ambitions.



Developing and retaining talent

We encourage colleagues to explore diverse career paths through cross-functional lateral development and take advantage of promotion opportunities where appropriate.

Our dedicated careers portal, personal development plans, job rotations, project assignments, mentoring programmes, coaching, online learning platforms, educational assistance programmes, and attendance at external conferences and seminars are just some of the resources available to colleagues to support their professional growth.

In 2023, we provided our senior leaders with unlimited remote coaching for six months to support their personal and professional development. We also conducted leadership training for over 120 leaders and rolled out a new leader induction training programme to equip first time leaders with specific information for their role.

Whilst the talent market remains competitive, Infineum's turnover rate is generally lower than industry benchmarks in the countries we are located in, reflecting a welcoming and fulfilling work environment. In 2023 our overall turnover rate was 7.6%, with turnover from resignations at a rate of 4.7%.

Colleague engagement



“The experience with the remote coaching has been instrumental for my personal growth, providing me with new tools and insights to navigate both professional and personal challenges with enhanced self-awareness. The personalised coaching sessions have honed my leadership skills, boosted my productivity, and helped me cultivate a growth mindset that’s essential for long-term success. Being a coach myself, I’m a strong believer in the power of coaching and I’m grateful to Infineum for offering us this opportunity.”

Liuba Bettaglio, Global Digital Transformation Programme Manager

Promoting diversity, equity, and inclusion (DE&I)

Inclusion and diversity (I&D) has long been a cornerstone of Infineum's values. In 2023, we enriched our approach by including equity to become diversity, equity and inclusion (DE&I).

This has included the appointment of a new DE&I Director role reporting directly to the CEO, who has taken senior sponsorship for our DE&I organisation. We will continue to further embed equity within our organisation during 2024.

"Embracing DE&I means a stronger focus on Equity in the workplace to help further accelerate our ambition to enable all colleagues to achieve their full potential."
Infineum DE&I Director, JR Wise



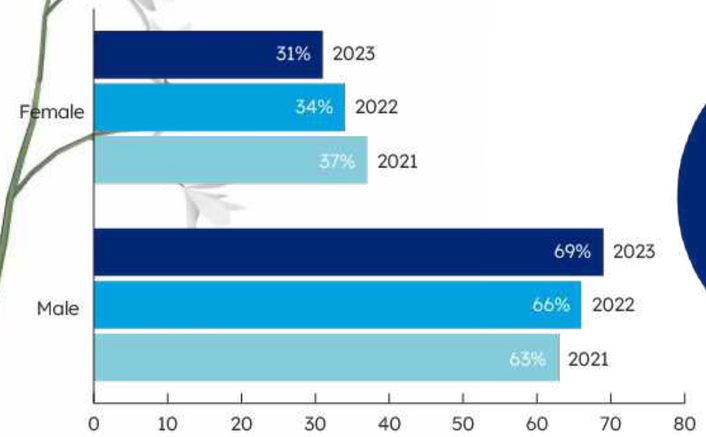
Diversity in recruitment

Historically, our industry has been male-dominated, especially at manufacturing sites. Nevertheless, Infineum endeavours to attract and retain a more diverse talent pool, including through efforts to promote STEM disciplines with younger generations.

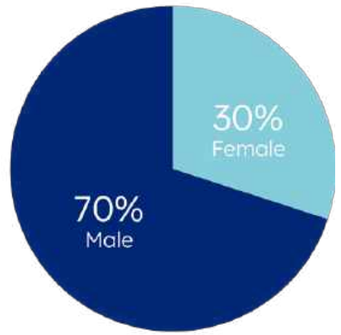
Indeed, we aim to reflect the diversity of our markets, communities and relevant local talent pools and are committed to identifying and removing potential bias in both recruitment and internal development processes.

Our recruitment materials emphasise our commitment to diversity and we use appropriate channels, such as women and diversity job boards, minority recruitment agencies and partners, technical groups, networks and affiliations on LinkedIn to reach diverse candidate pools. We request that our recruiting partners provide a balanced mix of candidates in terms of gender and other indicators of diversity. We then use diverse assessment panels and a structured interview process to create an objective and unbiased recruitment experience for candidates of all backgrounds.

New hires gender split



Global gender split 2021 to 2023



Diversity in recruitment



We are increasing collaboration with educational institutions to engage more under-represented groups. In the USA, we target schools with more diverse student populations and build relationships with affinity groups for engineers from diverse backgrounds.

In 2023, we started a partnership with the Future of STEM Scholars Initiative (FOSSI), aiming at increasing the number of under-represented professionals in STEM by providing scholarships, internship opportunities and mentorship to students pursing STEM degrees at historically black colleges and universities. We also aim to integrate our community outreach initiatives with our recruitment efforts at local universities ensuring that local minorities are included in these efforts.

Diversity in Leadership

We have set specific ambitions to ensure that our leadership population reflects the communities in which we operate and the talent pools that they derive from. We continue to focus on these and we will implement targeted initiatives and action plans to achieve our goals.

Global talent metrics

Talent metrics	End of 2023	2025 Ambition
Senior leaders in Asia	25%	30%
Executive leaders in Asia	16%	25%
Female senior leaders	30%	33%
Female executive leaders	20%	25%
Ethnic Minority senior leaders in US	27%	25%
Ethnic Minority senior leaders in UK	15%	10%

Affinity groups

Affinity groups for women and for ethnicities were introduced in 2021, bringing together colleagues who share common interests, characteristics, or life experiences to meet and connect with others in a safe space that allows open and honest sharing.

They serve as an additional tool to overcome potential barriers to advancement among talented colleagues from under-represented groups. The groups are set up locally at our various sites and are open to all local colleagues. We are planning to introduce more affinity groups in 2024 including our first LGBTQ+ group.



Infineum colleagues posing in #EmbraceEquity pose in celebration of International Women's Day 2023.

Affinity groups

In 2023, the US Women's Affinity Group volunteered to mentor high school girls at a Women's Future Leadership Academy event in New Jersey. The event was organised by Junior Achievement, the largest US organisation dedicated to giving young people the knowledge and skills to make smart academic and economic choices.

And this was part of a collaborative girl empowerment series. Our DE&I journey is ongoing and we continuously look for ways to learn from the best practices, bring in new ideas and drive inclusivity. Indeed, we regularly engage external speakers, experts, and charities to expose colleagues to the latest insights on inclusion and keep our colleague community united and aligned on this key value.



Infineum US colleagues volunteer to mentor the next generation of women leaders.

Colleague engagement



“It is great when we have opportunities to live our core values, and because our organisation strives to make a positive impact on the next generation of leaders, partnering with JA makes perfect sense. This event brought together a diverse group of professional women to share their personal experiences, learnings, and best practices, to support local young women’s growth and career aspirations.

Christina Salgueiro, Process Leader

10 Community engagement

Delivering a positive impact

Infineum is committed to delivering a positive impact in the communities in which we are located. We aim to nurture excellent relationships with people who work and live near our sites, including emergency service providers, schools and community groups.

In line with our objectives, our Global Volunteering Standard provides an additional day's annual leave for colleagues to support our communities by volunteering for a local charity or participating in activities to promote and encourage Science, Technology, Engineering and Maths (STEM) skills in the next generation. In 2023, for the first time, we exceeded our goal set for 2025 as 28% of colleagues participated in this initiative, up from 16% in 2022.

Colleagues from the Infineum China Business and Technology Center used their volunteering day to plant trees and help run activities for children with special needs. The first volunteering event took place in March, when a group of colleagues planted trees at the Baiyouju Ecological Farm on Chongming Island. The second event took place on China's Children's Day in June at Feiye Art Special Education School in Shanghai. The event was organised by the Shanghai Jinqiao Economic and Technological Development Zone Enterprise Association, with colleagues helping to create a memorable experience for children with special needs.

Our US colleagues have supported Habitat for Humanity by volunteering to help with the construction of a new home in Summit, New Jersey, for people in need of accommodation within the local community.

Community engagement

Delivering a positive impact Promoting STEM education Charity fundraising



Infineum team in Singapore shows commitment to building a cleaner environment through a beach clean-up activity.

The volunteer team helped to complete a modular housing unit by insulating the basement, filling in access holes in the floors and landscaping the outdoor area. Habitat for Humanity is an international charity fighting global poverty and homelessness by building homes to help families achieve strength, stability, and self-reliance.

Inspired by the “Clear Shores, Clean Waters for Singapore 2019 Campaign” organised by the Singapore Chemical Industry Council (SCIC), Infineum Singapore took the initiative in 2022 to set up its own annual beach clean-up as a commitment to environmental protection.

Tree Planting for a Greener Planet
Read more

Revitalising our Earth with beach clean-up
Read more

Community engagement

This year, a total of 51 colleagues from the Singapore Plant and the Business and Technology Centre joined together for a morning to take part in a beach clean-up activity at Pasir Ris Park and collected a total of seventy-two kilogrammes of litter, helping to reduce pollution and restore the beauty of the beach. Other colleagues in Singapore took part in the OneMillionTrees movement, planting 50 trees along a stretch of road called Woodlands Road. The tree planting event, held on 20 September, was attended by nearly 60 colleagues from our Singapore Plant and Business and Technology Centre.

Our Procurement and Global Supply Planning Teams at Milton Hill, UK, volunteered for Oxford-based mental health charity, Restore. Restore takes a holistic approach to mental health recovery and incorporates gardening activities into its recovery programmes. Our volunteers helped with maintenance work on its Elder Stubbs Allotment. The allotment grows produce for their Restore Café, which offers people with mental health difficulties the opportunity to learn catering and customer service skills.

Volunteering initiatives like this not only help organisations like Restore overcome resource limitations but also create a strong bond between businesses and the local community.

Community engagement

“The support of corporate partners like Infineum is so important. It’s thanks to its supporters that Restore can help people to rebuild their lives. The volunteer efforts made a direct impact on a therapeutic horticulture programme that benefits over fifty people every week, supporting them towards mental health recovery. In total, Restore supports five hundred people a year through six thousand activities and coaching sessions. Two-thirds of people will leave Restore and enter employment, volunteering, or further training. Volunteers make such a positive difference to the work Restore does, in raising community awareness and helping to break down stigma around mental ill-health.”

Matt Jerwood, Restore

Promoting STEM education

STEM skills are crucial for our business capabilities and success. Our future workforce will depend on more young people being encouraged to study STEM subjects and entering STEM careers. Our schools outreach programme helps address this challenge.



Infineum colleagues at a STEM event.

Our international network of STEM ambassadors regularly organise engagement sessions at local schools and attend careers fairs to share their experience of careers in STEM and give advice to children of all ages. For example, Infineum's Executive Vice President, Nicki Pickup took part in an event run by the Education Business Partnership, a not-for-profit organisation that brings together education and business in the Thames Valley, to give mock interview sessions to young people.

Through practicing for job interviews with Nicki, students had the chance to learn the skills and knowledge they need for entry into further education, or a job interview in STEM.

Infineum UK ensures STEM success with local students
Read more

Nicki said "I was very impressed by the enthusiasm of the students. Many had very clear ambitions for their future and were keen to pursue a career in STEM where they could make a positive impact in their community. I was very glad to be involved in the exercise and help boost students' confidence."

Community engagement

Our Italian site in Vado Ligure once again opened its doors to local students interested in learning more about careers in STEM. The visit was part of an ‘open door’ initiative, known locally as Fabbriche Aperte Giovani. This annual event aims to inspire and encourage middle school students’ future career choices in science and innovation by providing a variety of ‘show and tell’ experiences that enable them to see first-hand what’s involved.

As a long-term supporter, Infineum Italia joined together with twenty-four other Vado local businesses and a variety of scientific associations to host the hundreds of students who take part each year. After a quick overview of Infineum’s business, the students were invited on a guided tour of the site. Andrea Villani, Vado Plant Contact Engineer, said: **“I was happy to share our passion for STEM and witness the students’ attitude and curiosity during the visit.”**



Infineum Italia inspires local students interested in STEM
Read more

Infineum Japan signed a partnership agreement with local authorities in Ohta City, Tokyo, trialling educational programmes to encourage children to study STEM at seven local primary schools. As part of the partnership, a team of volunteers from our site in Tokyo visited two local schools to show pupils how STEM learnings are relevant to our daily work at Infineum. As part of the syllabus, children had the opportunity to learn the difference between water and oil in terms of viscosity, boiling point, and specific gravity through visual experiments. The team also ran an interactive session to give the children an overview of the automotive industry and an understanding of environmental problems caused by greenhouse gas emissions, explaining the crucial role additives play to reduce emissions. Pupils were asked to design sustainable cars of the future which had to be human-centric and environmentally friendly.

STEM learning boosts interest at local schools in Tokyo
Read more

Driveline Technologist Hirokazu Kiuchi said:
“I was extremely impressed by the students’ presentations of their ideas on sustainable cars of the future, designed from unique perspectives with a lot of passion. On the one hand, our workshops gave pupils a chance to see things from different points of view, and on the other hand, they filled us with their fresh thoughts and ideas.”

Lubes Technologist Akihiro Kodaka said:
“I believe STEM activities are an investment for our industry as we could influence children’s growth positively.”

Community engagement

Colleagues in the US have dedicated their time and energy to volunteer with the Future of STEM Scholars Initiative (FOSSI), a partnership between the American Chemistry Council (ACC), American Institute of Chemical Engineers (AIChE), Chemours, and the HBCU Week Foundation, aimed at increasing the number of under-represented professionals in STEM by providing scholarships to students pursuing STEM degrees at Historically Black Colleges and Universities (HBCUs). Infineum supports this initiative, which grants $40,000 per scholarship and connects students to leadership development, mentoring, and internship opportunities.

Inspiring Underrepresented Students in STEM with FOSSI
Read more

Helen Clear, Head of Communications, who volunteered at the event, shared her thoughts, saying:

"I was glad to take part in this initiative as I learned just how much scholarships like this can change lives. It's very humbling to be involved and to meet so many amazing people."

Charity fundraising







In addition to volunteering, our colleagues frequently organise fundraising events for local charities throughout the year. We are proud to play a role in supporting our communities and making a meaningful difference to the lives of those in need.

At our head office in Milton Hill, combined donations from Infineum and the dedicated fundraising efforts of our colleagues raised more than £85,000 for charities in 2023, with colleagues contributing over £39,500 through various fundraising activities. All the funds were distributed to deserving charities, each making a significant impact in their respective areas. HEROS, a charity that retrains ex-racehorses to offer bespoke education programmes for children with special educational needs or young people who struggle in mainstream schools, received £11,000. Monies were raised through a laptop sale, a charity Chinese New Year lunch, and an Easter raffle.

Celebrating Infineum UK's charitable impact in 2023
Read more

Charity fundraising







Wild Oxfordshire received £5,725, supporting their mission to catalyse nature recovery across the county. Infineum organised diverse fundraising activities, including a plant sale, a photography competition, and a bake-off. The ME Association, focused on post-viral fatigue syndromes, received support through a charity football match, a tombola, and a furniture sale, raising £5,767 for the vital advocacy and services they provide.

The Newman Holiday Trust, which provides holidays for over 120 children with disabilities, saw an impressive total raised of £9,845 from events such as an auction, Christmas quiz, and Christmas lunch. Other charities that received donations included Ghost Fishing, True Colours Theatre, Home Start, The Trussell Trust, SOFEA, The Didcot Powerhouse, Play2Give.

11 Governance

Corporate governance

Good corporate governance is essential to ensuring that Infineum remains a well-managed and profitable group of companies. The group's central Board of Directors and Corporate Leadership Team are responsible for setting long-term strategies and goals, and for ensuring their implementation.

An executive management oversight committee ensures risk management processes are in place, properly communicated, and are working satisfactorily across the organisation. This team, along with our Board of Directors, also reviews the major corporate risks that can significantly impact our reputation, operations and profitability. Working with line management, the team ensures that mitigation plans and resources are prioritised, and corrective actions are taken as required.

Risk management is embedded in the day-to-day management and operation of our business. It is an integral part of our culture and underpins the decisions that we make. Our internal risks and controls framework provides a rigorous approach towards managing the risks we faced in our business. It provides assurance that systems and procedures are in place to monitor and mitigate risks. It is backed by independent validation, provided by internal audits, external audits, and the internal audit subcommittee of the Infineum group's central Board of Directors.

Embedding sustainability

Infineum's Sustainability Executive Team champions the integration of sustainability into our growth strategy. This team is comprised of Executive Directors from key functional areas who oversee the roadmaps of activity and drive the Infineum group towards its ambitions. They also advise on the development, execution and stewardship of the supporting initiatives required.

Infineum's Sustainability Implementation team is comprised of eight full-time colleagues who partner with the different business functions to embed our sustainability strategy throughout our operations.

All colleagues are encouraged to play their part in the sustainability journey and since 2021, sustainability metrics have been added to the incentive-based pay scheme. The carbon intensity of our operations is now factored into this scheme to further incentivise individual and collective action.

An interactive dashboard was launched in 2023 to give all colleagues an overview of our carbon footprint and allow them to keep up-to-date with progress and understand the trends in their site or business area.

Business ethics

Infineum's culture is built on strong ethical values. In everything we do, we pride ourselves on maintaining safe systems and supply chains, building lasting and responsible relationships with our partners, suppliers, and customers, and creating a sound and resilient organisation for the future.

We believe our reputation for scrupulous dealing is a priceless asset and uphold it by always choosing the course of highest integrity, even where the law is permissive. This includes support for the principles of international organisations with respect to efforts to combat bribery and corruption; the expectation to pass up opportunities or advantages that would sacrifice ethical standards; a prohibition on offering, soliciting, accepting or paying any bribe, "facilitation payment", kickback or other improper payment; the promotion and expectation of similar standards from our business partners, service providers, suppliers and customers; accurate record keeping; and reporting actual or potential violations of laws, regulations or Infineum's Code of Conduct.

Our Code of Conduct encompasses our commitment to operate safely, respect the law, protect the environment, operate ethically and without conflicts of interest, treat each colleague with respect, and to manage in good faith the assets and responsibilities with which we have been entrusted. These establish the basic rules, standards and behaviours colleagues are expected to follow when working for and conducting business on behalf of Infineum.

Governance

Our internal audit function reviews our Management Systems to ensure Code of Conduct compliance.

All relevant colleagues and contractors receive comprehensive training on Infineum's core policies and associated behaviours, including role-based mandatory training on business ethics.

Guidance and support are available around-the-clock to Infineum colleagues on business ethics. Colleagues are encouraged to report potential violations of the law, regulations or Code of Conduct, and are empowered to raise concerns anonymously and confidentially via a dedicated reporting hotline.





12 About this report



About this report

This is Infineum's fourth annual sustainability report. It was published in June 2024 and covers the global activities of the Infineum group of affiliated companies during the period from January 1 to December 31, 2023.

Data covers all owned and operated locations, including manufacturing plants and business and technology centres. The content of this report is designed to transparently share our performance on the issues that are relevant to the interests and expectations of our stakeholders and important to our sustainability strategy.

The Global Reporting Initiative (GRI) reporting standards were used as a basis to guide the disclosures and performance indicators shared in the report. An independent auditor was engaged to provide reasonable assurance on our scope 1 and 2 GHG emissions data and limited assurance on our water and waste data.

We welcome feedback and questions on the contents of this report.

Please contact us at:
sustainabilityteam@infineum.com



Data methodology

The organisation-specific metric chosen to calculate the ratio was metric tonnes (t) of production. All types of energy are included within the intensity ratio: fuel, electricity, heating, cooling, and steam. The ratio used energy consumption within the organisation.

The data has been calculated to three significant figures. The base year for our calculation is 2018, as it is considered the most recent representative year for production across Infineum sites globally. The calculations account for the six major GHGs (CO2, CH4, N2O, HFCs, PFCs, and SF6) where possible.

Non-renewable electricity and steam at our site in Vado Ligure, Italy is produced by natural gas being burned in the co-generation unit and the energy use is accounted for as Natural Gas.

We use Department for Environment, Food & Rural Affairs (DEFRA) emission factors for most emissions except for refinery fuel gas where we use the molecular content of gas and stoichiometry; and grid electricity for the UK and USA, where we use the International Energy Agency (IEA) and Environmental Protection Agency (EPA) factors instead.

When refrigerant data is unavailable, we use estimates based on average leak rates supplied by DEFRA UK.

We measure GHG emissions based on the operational control criterion and follow the GHG Protocol Corporate Standard for scope 1, 2 and 3 emissions.

About this report



We are measuring the following scope 3 emission categories: purchased goods and services, capital goods, fuel and energy related activities, upstream transport and distribution, waste generated in operations, business travel, employee commuting, upstream leased assets, downstream transport and distribution, processing of sold products, use of sold products, end of life treatment of sold products and investments.

We work with site leads to identify the most suitable individual(s) to identify the direct and indirect emission sources for that site and provide emissions and other environmental data each month.

We engage with these representatives on a monthly basis.

Small offices (10 or fewer Infineum colleagues) are excluded from emissions estimates.

Due to the Services Utilities Materials Facilities (SUMF) agreement for our Rio de Janeiro site, estimated consumption of steam and electricity figures are yet to be independently metered. As a result, this site is billed for steam consumption in the amount of natural gas used to generate said steam.

Previously reported figures may be recalculated to reflect more accurate and reliable data.



CAUTIONARY STATEMENT

Statements of future ambitions, goals, events or conditions in this publication, including projections, plans to reduce emissions and emissions intensity, sensitivity analyses, expectations, estimates, the development of future technologies, and capital investment and business plans, are forward-looking statements.

Actual future results, including the achievement of ambitions to reach scope 1 and scope 2 50% reduction by 2030 and net zero from operated assets by 2050, to reach Scope 3 20% reduction by 2030, to meet its emission-reduction plans and associated capital investment and project plans as well as technology efforts, and reserve or resource changes could vary depending on the ability to execute operational objectives on a timely and successful basis; changes in laws and regulations, including international treaties and laws and regulations regarding greenhouse gas emissions and carbon costs; government incentives; trade patterns and the development and enforcement of local, national and regional mandates; unforeseen technical or operational difficulties; the outcome of research efforts and future technology developments, including the ability to scale projects and technologies on a commercially competitive basis; changes in supply and demand and other market factors affecting future prices of oil, gas, and petrochemical products; changes in the relative energy mix across activities and geographies; the actions of competitors; supply chain considerations, changes in regional and global economic growth rates and consumer preferences; the pace of regional and global recovery from the COVID-19 pandemic and actions taken by governments and consumers resulting from the pandemic; changes in population growth, economic development or migration patterns; military build-ups or conflicts.

About this report



We do not undertake to provide any updates or changes to any data or forward-looking statements in this document. The statements and analysis in this document represent a good faith effort by Infineum despite significant unknown variables and, at times, inconsistent market and government policy signals. Energy demand modeling aims to replicate system dynamics of the global energy system, requiring simplifications. The reference to any scenario, including any potential net-zero scenario, does not imply Infineum views any particular scenario as likely to occur. In addition, energy demand scenarios require assumptions on a variety of parameters. As such, the outcome of any given scenario using an energy demand model comes with a high degree of uncertainty.

For example, the IEA describes its net zero emissions (NZE) scenario as extremely challenging, requiring unprecedented innovation, unprecedented international cooperation and sustained support and participation from consumers.

Investment decisions are made on the basis of Infineum's separate planning processes but may be secondarily tested for robustness or resiliency against different assumptions, including against various scenarios. Infineum reported emissions, including reductions and avoidance performance data, are based on a combination of measured and estimated data. Calculations are based on industry standards and best practices. The uncertainty associated with the emissions, reductions and avoidance performance data depends on variation in the processes and operations, the availability of sufficient data, the quality of those data and methodology used for measurement and estimation. Changes to the performance data may be reported as updated data and/or emission methodologies become available. Infineum works with industry to improve emission factors and methodologies, including measurements and estimates.

Download our Independent Assurance Statement here.

13 | Key figures

GRI 305-1: Direct (Scope 1) GHG Emissions
Gross Direct (Scope 1) GHG Emissions in Metric Tonnes of CO2 equivalent

Emission sources	2018	2019	2020	2021	2022	2023
Diesel	6,210	5,830	6,530	6,480	6,220	5,740
Electricity: Non-Renewable (Onsite generated)	12,700	13,100	13,200	11,700	11,200	9,780
LPG	5	6	6	6	6	5
Gasoline	77	126	105	109	111	116
Natural gas	15,700	14,500	14,400	15,100	15,100	15,000
Vehicles: distance travelled	234	239	80	128	128	112
Propane	32	28	28	31	25	25
Refinery fuel gas	1,160	1,130	1,170	1,490	1,320	1,480
Refrigerants	22,600	17,700	1,730	10,300	1,970	2,200
Steam (Onsite generated)	15,600	15,100	15,200	15,400	15,900	15,700
Process emissions	6,120	7,490	5,040	6,770	6,050	6,150
Grand Total	80,400	75,200	57,500	67,500	58,000	56,300

GRI 305-2: Energy Indirect (Scope 2) GHG Emissions
Gross Location-based Energy Indirect (Scope 2) GHG Emissions in Metric Tonnes of CO2e

Emission sources	2018	2019	2020	2021	2022	2023
Electricity: Non-Renewable	46,700	43,400	41,500	41,500	41,600	40,500
Electricity: Renewable	-	-	49	47	51	55
Steam	78,900	80,800	75,100	72,800	77,000	75,700
Grand Total	126,000	124,000	117,000	114,000	119,000	116,000

GRI 305-2: Energy Indirect (Scope 2) GHG Emissions
Gross Market-based Energy Indirect GHG Emissions in Metric Tonnes of CO2e

Emission sources	2018	2019	2020	2021	2022	2023
Electricity: Non-Renewable	51,500	50,700	49,500	49,800	50,100	49,700
Electricity: Renewable	-	-	-	-	-	-
Steam	78,900	80,800	75,100	72,800	77,000	75,700
Grand Total	130,000	132,000	125,000	123,000	127,000	125,000

GRI 305-4: GHG Emissions Intensity
GHG Emissions Intensity Ratio for the Organisation in Metric Tonnes of CO2e/ Tonnes of Production

Emission sources	2018	2019	2020	2021	2022	2023
Diesel	0.005	0.005	0.006	0.005	0.005	0.005
Electricity: Non-Renewable	0.048	0.047	0.048	0.044	0.042	0.046
LPG	0	0	0	0	0	0
Gasoline	0	0	0	0	0	0
Natural gas	0.013	0.012	0.013	0.013	0.012	0.014
Vehicles: distance travelled	0	0	0	0	0	0
Process emissions	0.005	0.006	0.004	0.006	0.005	0.006
Propane	0	0	0	0	0	0
Refrigerants	0.018	0.015	0.002	0.009	0.002	0.002
Steam	0.076	0.08	0.08	0.074	0.075	0.083
Refinery fuel gas	0.001	0.001	0.001	0.001	0.001	0.001
Grand Total	0.166	0.167	0.153	0.152	0.142	0.157

GRI 305-3: GHG Emission Intensity
Other indirect (Scope 3) GHG Emissions in Metric Tonnes of CO2 equivalent

Emission sources	2018	2019	2020	2021	2022	2023
Purchased goods and services	1,919,086	1,828,006	1,785,732	1,986,517	2,016,958	1,708,207
Capital goods	10,359	10,301	9,446	8,603	10,929	13,561
Fuel and nergy related activities	37,345	38,602	38,649	43,774	41,622	39,579
Upstream transport and distribution	129,606	130,183	119,643	129,979	127,332	96,319
Waste generated in operations	6,482	5,834	9,212	8,384	8,145	6,275
Business travel	6,326	10,549	1,609	246	2,350	5,615
Employee commuting	38,935	39,172	28,857	33,628	32,428	31,956
Upstream leased assets	44	0	24	47	16	45
Downstream transport and distribution	19,659	19,027	16,496	22,238	22,962	18,534
Processing of sold products	1,818	1,794	1,662	1,872	1,838	1,605
Use of sold products	243,011	235,810	237,953	213,882	200,412	189,794
End-of-life treatment of sold products	1,135,375	1,107,235	1,015,139	1,118,497	1,162,541	995,714
Downstream leased assets	-	-	-	-	-	-
Franchises	-	-	-	-	-	-
Investments	34,751	31,795	41,856	53,132	44,515	43,776
Grand total	3,582,798	3,458,308	3,306,278	3,620,798	3,672,047	3,150,981

GRI 302-1: Energy consumption within the organisation
Total Fuel Consumption within the Organisation from Non-renewable Sources in Gigajoules

Energy sources	2018	2019	2020	2021	2022	2023
Diesel	90,200	124,000	97,700	98,500	92,800	86,400
Co-gen Natural gas	595,000	598,000	605,000	578,000	582,000	547,000
Gas: LPG	87	104	94	96	96	80
Gasoline	1,190	1,940	1,650	1,720	1,770	1,890
Natural gas	305,000	284,000	282,000	297,000	296,000	293,000
Propane	544	464	461	516	420	424
Refinery fuel gas	84,200	84,300	84,800	86,800	78,600	85,500
Grand Total	1,080,000	1,090,000	1,070,000	1,060,000	1,050,000	1,010,000

GRI 302-1: Energy consumption within the organisation
Total fuel consumption within the Organisation from Non-renewable Sources in Megawatt-hours

Energy sources	2018	2019	2020	2021	2022	2023
Diesel	25,100	23,800	27,200	27,400	25,800	24,000
Co-gen Natural gas	165,000	166,000	168,000	161,000	162,000	152,000
Gas: LPG	24	29	26	27	27	22
Gasoline	331	539	458	476	490	524
Natural gas	84,800	78,900	78,300	82,400	82,300	81,300
Propane	151	129	128	143	117	118
Refinery fuel gas	23,400	23,400	23,500	24,100	21,800	23,800
Grand Total	299,000	293,000	298,000	295,000	292,000	282,000

GRI 302-1: Total Energy Consumption within the Organisation in Gigajoules

Total Energy Consumption within the Organisation in Gigajoules

Energy sources	2018	2019	2020	2021	2022	2023
Total fuel consumption	1,080,000	1,090,000	1,070,000	1,060,000	1,050,000	1,010,000
Total acquired electricity (renewable)	0	0	456	442	472	510
Total acquired electricity (non-renewable)	434,000	428,000	414,000	425,000	426,000	403,000
Total acquired steam	1,470,000	1,600,000	1,510,000	1,480,000	1,570,000	1,460,000
Total self-generated renewable electricity	456	456	11,675	10,646	9,651	9,002
Total energy consumption	2,984,456	3,118,456	3,006,131	2,976,088	3,056,123	2,882,512
Total sold electricity	50,094	52,611	54,341	43,423	32,947	36,395
Total sold steam	34,763	33,436	31,020	29,425	25,882	19,732
Net energy consumption	2,899,143	3,031,953	2,920,770	2,903,240	2,997,294	2,826,385
Energy intensity ratio (total per ton of production)	2.4	2.61	2.65	2.49	2.46	2.63

GRI 302-1: Total Energy Consumption within the Organisation
Total Energy Consumption within the Organisation in Megawatt-hours

Energy sources	2018	2019	2020	2021	2022	2023
Total fuel consumption	299,000	293,000	298,000	295,000	292,000	282,000
Total acquired electricity (renewable)	0	0	127	123	131	142
Total acquired electricity (non-renewable)	121,000	119,000	115,000	118,000	118,000	112,000
Total acquired steam	421,000	459,000	434,000	425,000	450,000	421,000
Total self-generated renewable electricity	127	127	3,240	2,960	2,680	2,500
Total energy consumption	841,000	871,000	850,000	841,000	863,000	818,000
Total sold electricity	13,915	14,614	15,095	12,062	9,152	10,110
Total sold steam	9,660	9,290	8,620	8,170	7,190	5,480
Net energy consumption	817,425	847,096	826,285	820,768	846,658	802,410
Energy intensity ratio (total per ton of production)	0.68	0.73	0.75	0.7	0.69	0.74

GRI 302-3: Energy Intensity
Energy Intensity Ratio for the Organisation in Gigajoules/ Tonnes of Production

Energy sources	2018	2019	2020	2021	2022	2023
Diesel	0.07	0.1	0.09	0.08	0.07	0.08
Electricity: Non-Renewable	0.55	0.57	0.59	0.55	0.52	0.54
Electricity: Renewable	0	0	0.01	0.01	0.01	0.01
LPG	0	0	0	0	0	0
Gasoline	0	0	0	0	0	0
Natural gas	0.25	0.24	0.25	0.25	0.24	0.27
Propane	0	0	0	0	0	0
Steam	1.46	1.63	1.64	1.53	1.55	1.66
Refinery fuel gas	0.07	0.07	0.07	0.07	0.06	0.08
Grand Total	2.4	2.61	2.65	2.49	2.46	2.63

GRI 303-1: Water Withdrawal by Source
Total Volume of Water Withdrawn in Megalitres

Water sources	2018	2019	2020	2021	2022	2023
Groundwater	333	322	293	318	271	209
Municipal supply	1,220	1,270	1,260	1,300	1,290	1,220
Sea	14,100	11,900	15,500	16,500	16,700	13,700
Grand Total	15,700	13,500	17,100	18,100	18,300	15,100

GRI 306-3: Total Weight of Waste Generated
Total Weight of Non-Hazardous Waste Generated in Metric Tonnes

Waste type and disposal methods	2018 - Waste generated (mt)	2019 - Waste generated (mt)	2020 - Waste generated (mt)	2021 - Waste generated (mt)	2022 - Waste generated (mt)	2023 - Waste generated (mt)
Solid Non-hazardous	3,790	4,020	3,750	3,570	4,740	3,180
Biological treatment	0	542	232	108	216	316
Incineration with energy recovery	722	605	425	571	987	509
Incineration without energy recovery	172	200	0	1	2	3
Landfill	2,460	2,260	2,810	2,520	2,410	2,010
Recycling	439	417	279	371	1,130	345
Reuse	-	-	-	2	-	-
Liquid Non-hazardous	2,020	3,200	4,500	5,360	6,280	4,080
Biological treatment	-	-	-	194	51	-
Incineration with energy recovery	0	1,550	1,460	1,350	920	520
Incineration without energy recovery	43	47	188	34	-	1
Landfill	-	-	1,220	2,090	3,820	2,260
Recycling	38	0	0	4	4	7
Reuse	-	-	-	-	-	-
Water Treatment	1,940	1,600	1,630	1,690	1,490	1,290

GRI 306-3: Total Weight of Waste Generated in Metric Tons
Total Weight of Non-Hazardous Waste Generated in Metric Tonnes

Waste type and disposal methods	2018 - Waste generated (mt)	2019 - Waste generated (mt)	2020 - Waste generated (mt)	2021 - Waste generated (mt)	2022 - Waste generated (mt)	2023 - Waste generated (mt)
Liquid Hazardous	9,460	9,680	10,100	11,400	10,800	10,200
Biological treatment	873	598	223	781	803	787
Incineration with energy recovery	7,260	6,810	7,800	9,160	8,890	8,320
Incineration without energy recovery	710	1,620	1,790	955	493	514
Landfill	-	75	43	1	0	-
Recycling	618	483	173	377	656	502
Reuse	-	91	83	2	-	-
Water Treatment	-	-	6	113	-	55
Solid Hazardous	3,310	3,090	3,010	2,940	3,180	2,040
Biological treatment	156	13	-	-	-	-
Incineration with energy recovery	2,160	2,480	2,060	2,150	2,440	1,380
Incineration without energy recovery	169	335	130	55	56	46
Landfill	612	69	655	555	500	461
Recycling	208	191	164	180	181	151
Reuse	-	2	-	-	1	-

GRI 306-3: Total Weight of Waste Generated in Metric Tons

Waste type and disposal methods	2018 - Waste generated (mt)	2019 - Waste generated (mt)	2020 - Waste generated (mt)	2021 - Waste generated (mt)	2022 - Waste generated (mt)	2023 - Waste generated (mt)
Solid Hazardous	3,310	3,090	3,010	2,940	3,180	2,040
Liquid Hazardous	9,460	9,680	10,100	11,400	10,800	10,200
Liquid Non-hazardous	2,020	3,200	4,500	5,360	6,280	4,080
Solid Non-hazardous	3,790	4,020	3,750	3,570	4,740	3,180
Grand Total	18,600	20,000	21,400	23,300	25,000	19,500