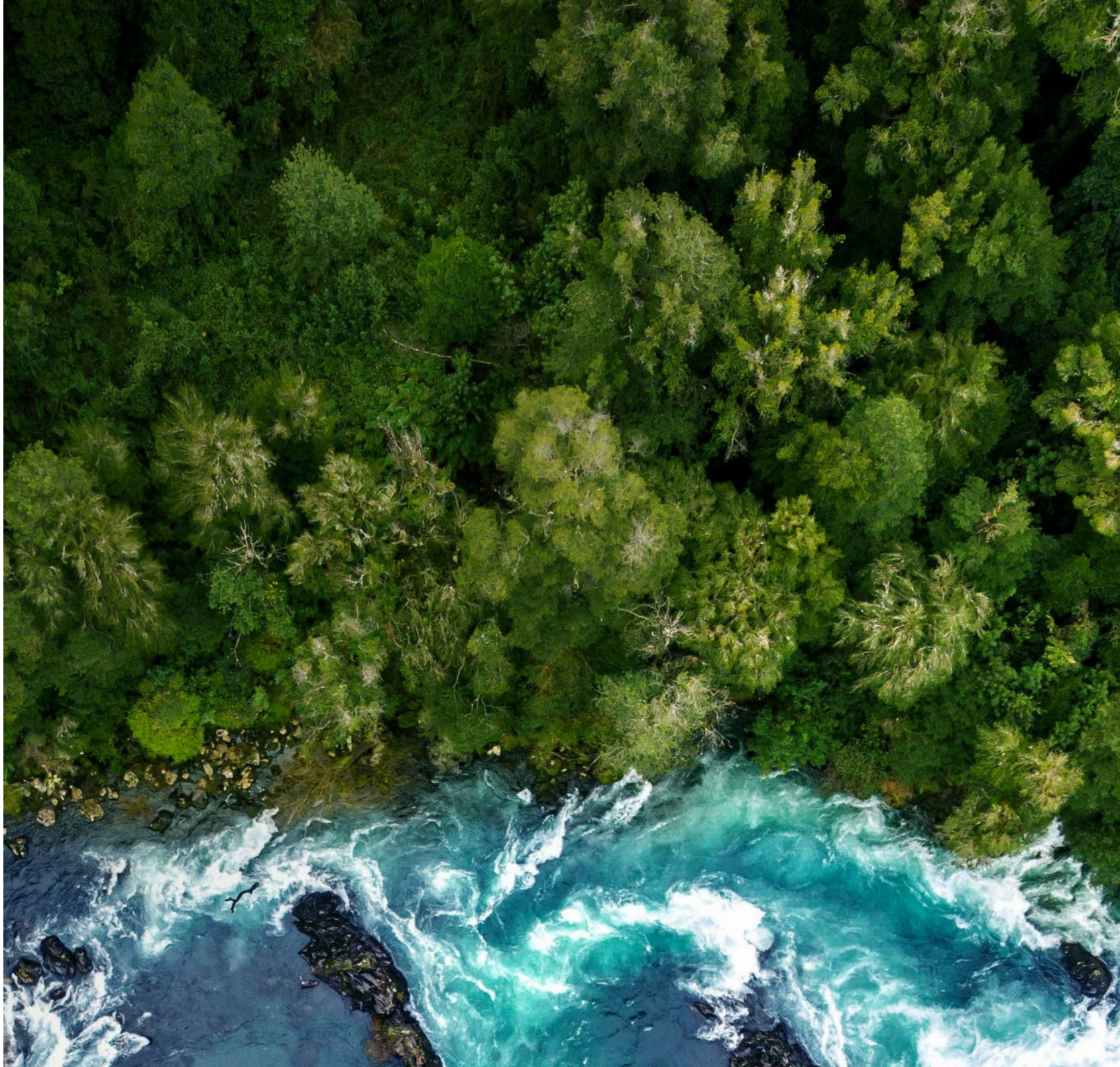
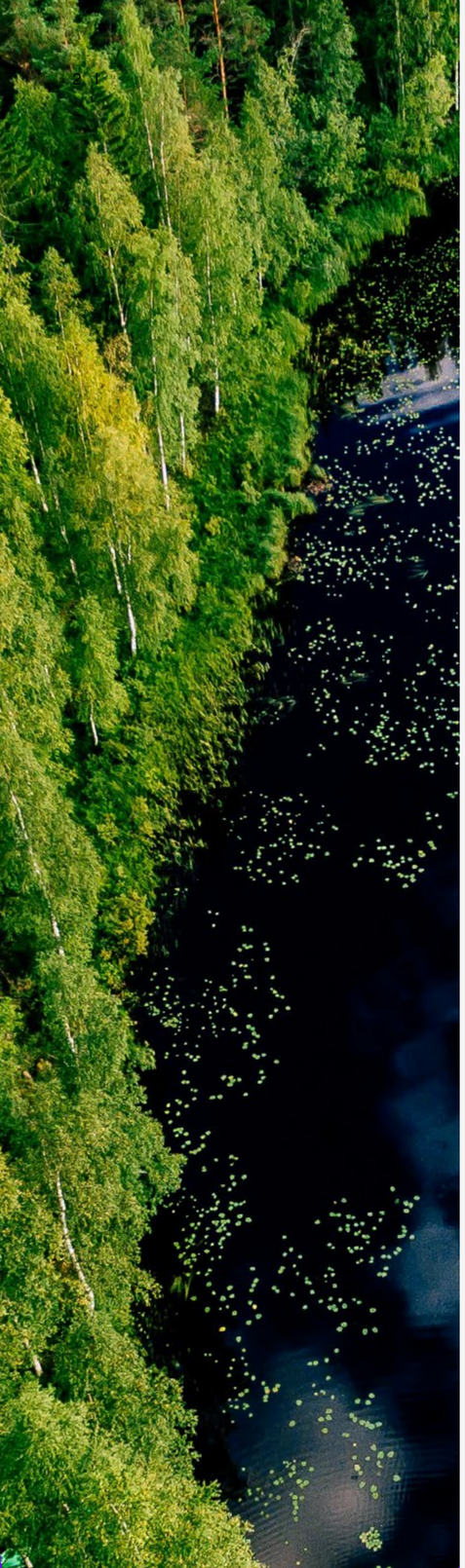
Gigaton Challenge

TRANE TECHNOLOGIES™





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Today, a bold commitment. Tomorrow, a better world.

Trane Technologies is a world leader in creating comfortable, sustainable, and efficient indoor environments, and in enhancing quality of life through temperature-management solutions for global transportation of fresh foods, vaccines, pharmaceuticals and other perishables.

We believe putting the planet first is one of our fundamental responsibilities.

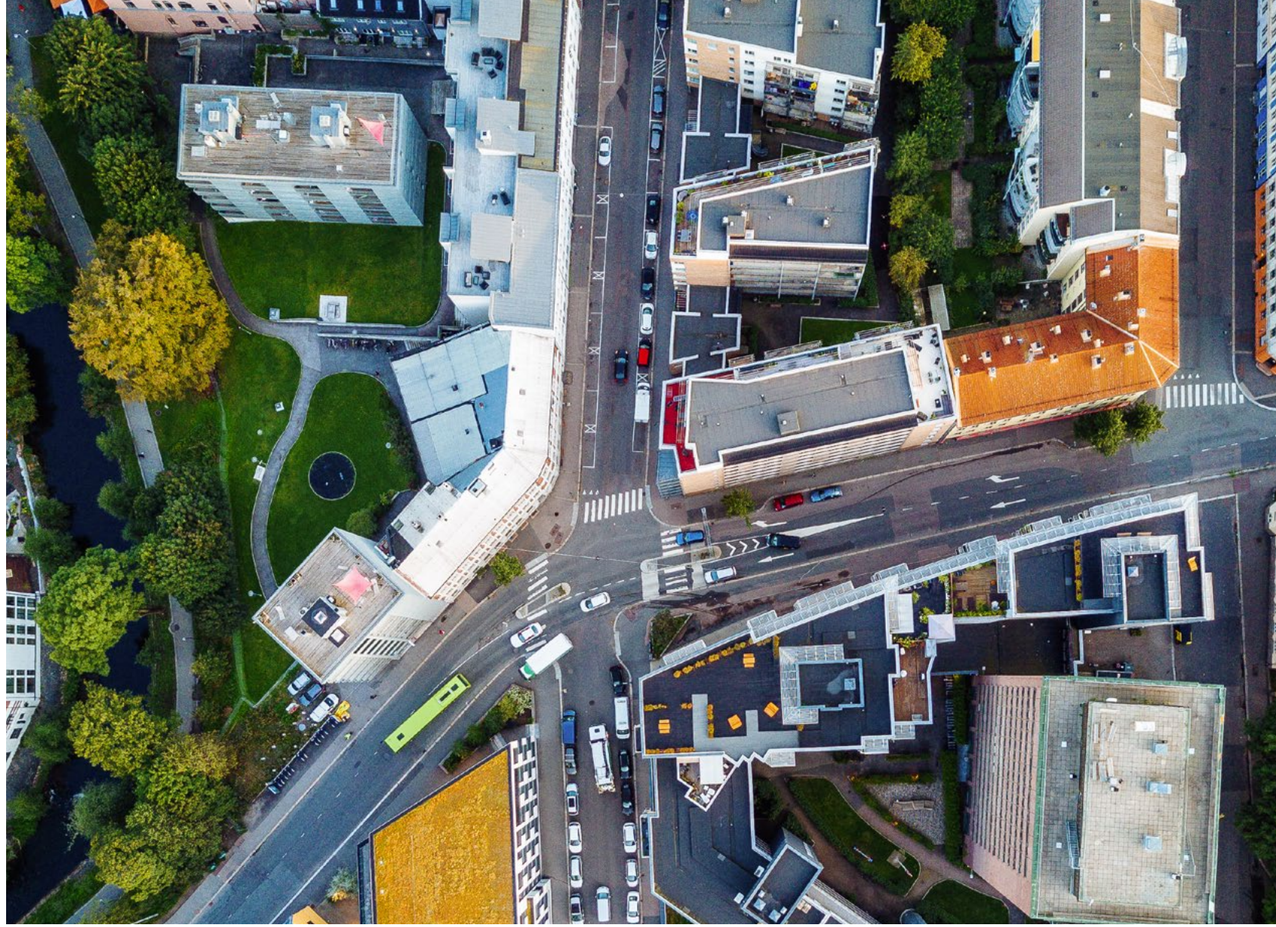
We are leading the way on climate change mitigation. Through technological innovation and strategic partnerships, Trane Technologies is committed to developing environmentally sustainable solutions with the same passion and rigor that drive our approach to all our key initiatives.

The Human Impact on Global Warming

Scientific evidence of global warming is definitive. **More than 97% of actively published climate scientists agree** that the increasing atmospheric concentration of greenhouse gases emitted from human economic activity is extremely likely to be responsible for the climate-warming trends over the past century.[1]

> In NASA's 140-year temperature record, the **10 warmest years have all occurred since 2005,** with the past six years being the warmest on record.[2]

Over millions of years, there are measured changes in global average temperatures that correlate with changes in the atmospheric concentration of greenhouse gases (GHG). This is normal. However, since the Industrial Revolution, scientists and researchers have observed abnormal and dramatic increases in GHG concentrations in our atmosphere.

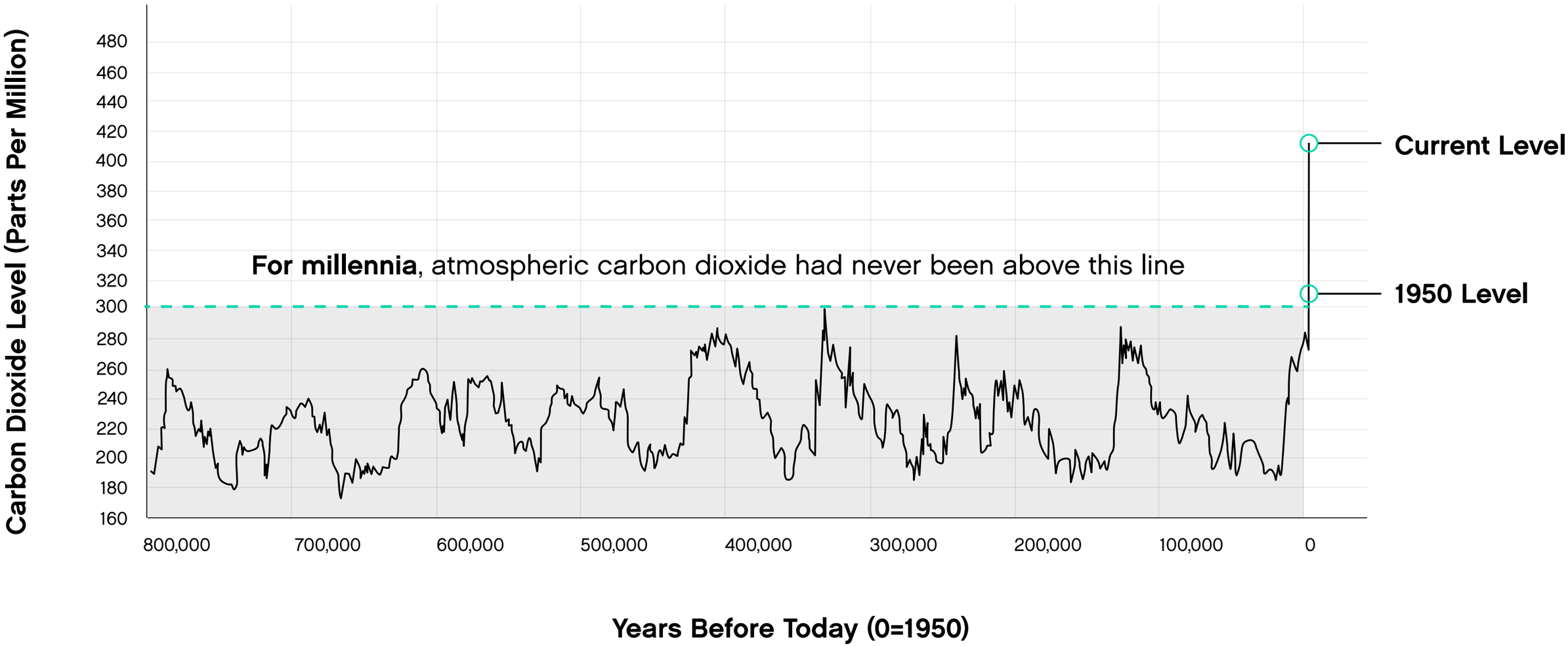


These abnormal concentrations are driving a global average temperature increase that poses increased risks to the stability of our modern global economy. It is clear that immediate change is necessary.

1. https://climate.nasa.gov/scientific-consensus/

2. https://climate.nasa.gov/scientific-consensus/

Climate Change: How Do We Know?



Credit: climate.nasa.gov

The widespread production and use of modern conveniences in our society result in greenhouse gases being added to our atmosphere. Carbon dioxide accounted for **76% of earth's GHG in 2015**,[3] and it will remain a contributor to global warming for thousands of years. Worldwide, human economic activity is currently responsible for **approximately 55 gigatons of CO_2e each year**, and that rate is increasing steadily.

3. https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/

4. https://www.c2es.org/content/international-emissions/

Changes in the atmospheric concentration of GHGs and of the average global temperature have been happening for millions of years. The chief concern now is the extreme rate of increase in greenhouse gas concentration that is produced by human, economic, and industrial activities. This increased concentration will lead to high-risk consequences on economies and lives. We're already seeing the damaging impact through more frequent and more powerful storms, raised sea levels that threaten coastal and low-lying inland areas, as well as social strife related to increased health risks and potential climate-related refugee situations.

> Climate change is **moving faster than we are.** We must listen to the Earth's best scientists.
>
> – UN Secretary-General Antonio Guterres, 2018 UN General Assembly Address

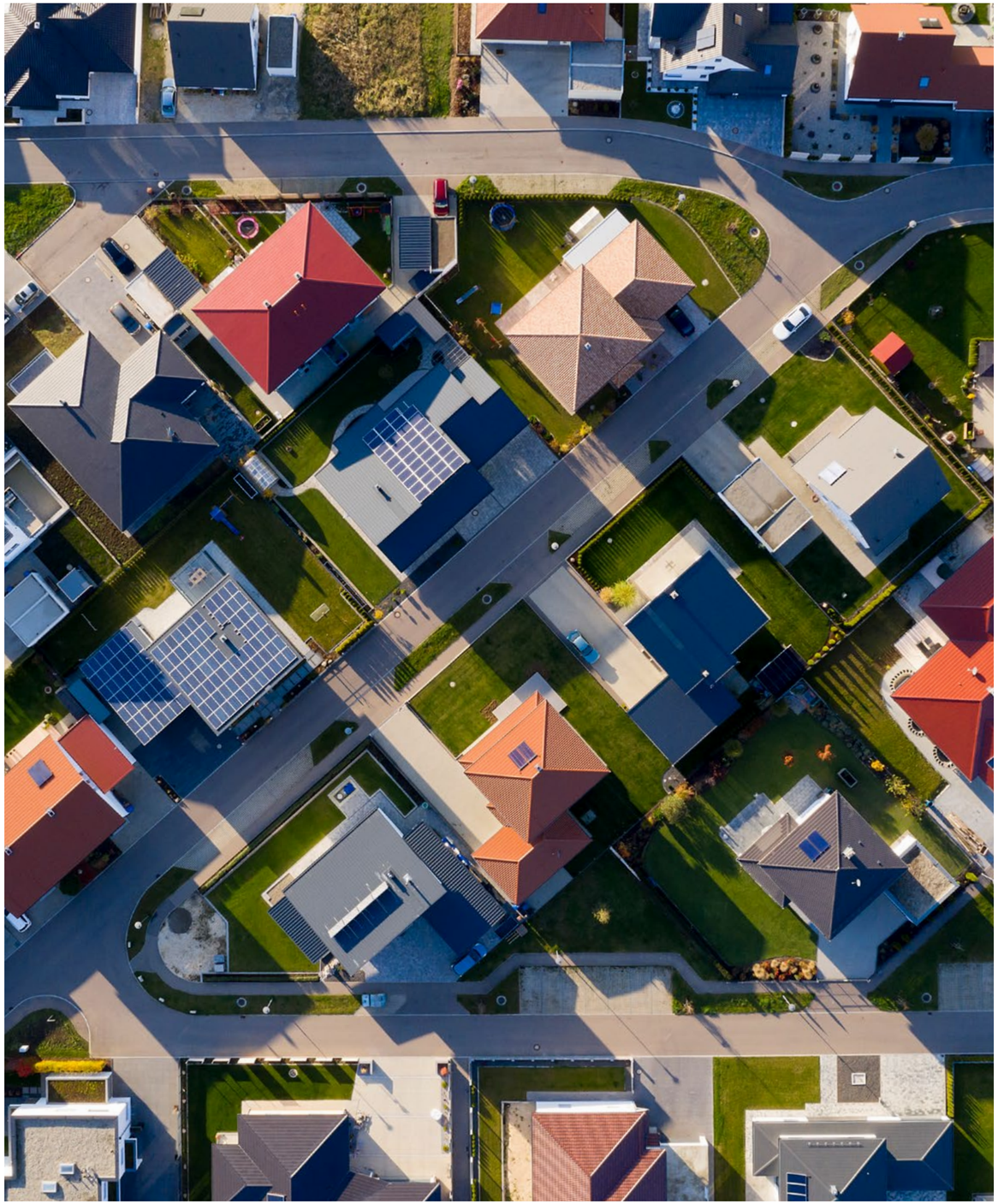
The course can be corrected. Immediate action and mitigation efforts can both lessen these risks and provide for further economic growth that aligns with ecological systems supporting life on earth. According to the Intergovernmental Panel on Climate Change (IPCC), the **global economy must achieve net zero GHG emissions by the year 2050** to prevent catastrophic environmental problems.[4]

Global Warming's Current Trajectory

Thus far, emissions related to human economic activity are on course to create a further average global warming beyond 1.5°C. Reducing global emissions now to limit warming to only 1.5°C is critical within this decade.[5]

> Global warming is likely to surpass **1.5°C before 2050** if emission rates continue at their current rate.

Climate-related risks to health, livelihoods, food security, water supply, human security, and economic growth are projected to increase with a global warming of 1.5°C, and increase further with 2°C. These risks depend on the magnitude and rate of warming, geographic location, levels of economic development and vulnerability, and on the choices and implementation of adaptation and mitigation options.[6] **To prevent warming beyond 1.5°C, the world must reduce emissions by 7.6% annually through 2030.[7]**



5. https://www.ipcc.ch/sr15/

6. https://www.ipcc.ch/sr15/

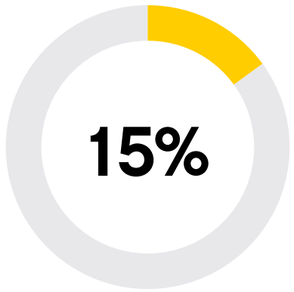
7. https://www.unenvironment.org/explore-topics/climate-change/facts-about-climate-emergency

Megatrends Relating to Trane Technologies

Trane Technologies is uniquely positioned to provide solutions to prevent a considerable amount of further atmospheric GHG concentration related to the heating and cooling of the built environment and perishable goods transport.

HVAC Technology

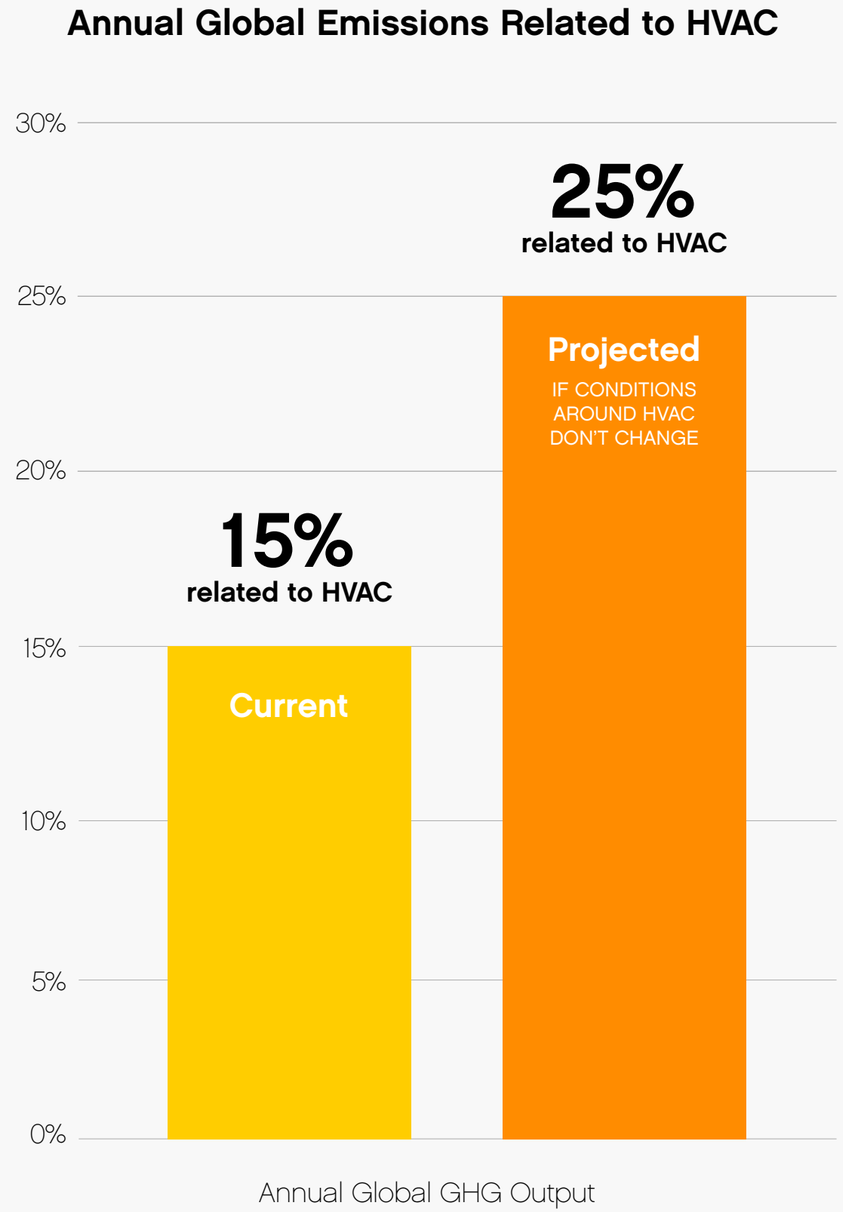
The industrialized world has been enjoying the benefits of air conditioning for roughly a century.[8]



related to HVAC

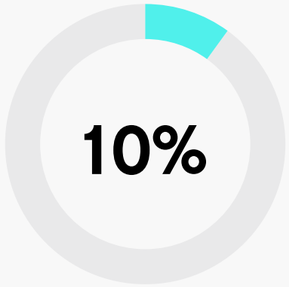
Air conditioners in buildings are expected to number **5.6 billion by 2050**, growing their share of global annual emissions from 15% to 25%.[9]

If developing countries embrace inefficient, inexpensive cooling systems that rely on high-GWP (global warming potential) refrigerants as they modernize, the carbon emissions related to HVAC could dramatically increase the world's annual output.[10]



8. https://www.popularmechanics.com/home/a7951/history-of-air-conditioning/
9. https://ccacoalition.org/en/initiatives/hfc
10. https://rmi.org/wp-content/uploads/2018/11/Global_Cooling_Challenge_Report_2018.pdf

Food Loss in the Cold Chain



Of World's Emissions

The rising global temperature makes safe and climate-controlled transport of food more important than ever, yet 10% of the world's emissions are from the loss of food. Experts estimate that a third of food produced globally is wasted or lost between the farm and the table.[11] Maintaining a stable cold chain during transport is essential to keeping food edible and preventing it from decomposing.

Our Road Ahead

A 2018 study of **more than 7,000 companies revealed that 215 of the world's biggest 500 could lose an estimated $1 trillion** due to climate change unless they take preemptive measures.[12] Conversely, 225 of the world's 500 biggest companies believe that providing solutions for mitigating climate change could generate more than **$2.1 trillion in new business**.[13]

11. https://www.gcca.org/resources/fighting-food-loss-and-waste
12. https://nca2018.globalchange.gov/
13. https://nca2018.globalchange.gov/

> **Limiting global warming to 1.5°C would require rapid, far-reaching and unprecedented changes in all aspects of society. With clear benefits to people and natural ecosystems, limiting global warming to 1.5°C compared to 2°C could go hand in hand with ensuring a more sustainable and equitable society.**
>
> – Intergovernmental Panel on Climate Change (IPCC) 2018

It's No Longer an Issue of Why

Whether businesses focus on preemptive measures such as emissions reduction or explore new opportunities related to climate change, there are clearly many pathways forward. As citizens of this planet, we have an inherent responsibility to take a stand and do our part to impact climate change for good. It's our obligation to begin this change today.

The Gigaton Challenge

We know there's a need for bold, systemic sustainability action from companies, entire industries, and our communities at large, and the urgency grows with each passing day. That's why Trane Technologies has committed to our Gigaton Challenge. It's a pledge to reduce

one gigaton

that's 1,000,000,000 metric tons

of greenhouse gas emissions (CO_2e), related to the use of our products, from our customers' operating footprints by the year 2030. It's just one aspect of our sustainability strategy with ambitious 2030 commitments, but it's one that deserves a deeper dive so you can see why it's important and how we intend to accomplish it.

“There are people who make things happen, there are people who watch things happen, and there are people who wonder what happened.

To be successful, you need to be a person who makes things happen.”

– Jim Lovell, American Astronaut

Why One Gigaton?

If you're unfamiliar with the term gigaton (GT), you're probably not alone—it's a unit of measurement so large that it's generally more useful in global-scale comparisons than in casual conversation.

> In scientific environmental discussions, one gigaton is equal to the GHG emissions from more than **200 million passenger vehicles** driven for one year, or the CO2 emissions from over **100 billion gallons of gasoline** consumed.

We believe there is no benefit to playing small and setting low, easily achievable goals. By choosing this monumental goal, Trane Technologies is taking a stand and sending the message that our future must change and will change.

As of 2020, **our customers' carbon footprint associated to the use of our products is approximately 20 times that of our operational footprint**, when considering both direct product emissions and indirect emissions related to the generation of electricity our products consume.

One Gigaton is an aggressive, attainable goal and a necessary first step toward humanity's imperative demand for global net zero greenhouse gas emissions.

Why Target Emissions?

Science is pointing to the need for emissions reduction. That is indisputable. Since 1970, CO_2 emissions have **increased globally by about 90%**, with emissions from fossil fuel combustion and industrial processes contributing about **78% of the total greenhouse gas emissions** increase from 1970 to 2011.[14] At present, global efforts to reduce GHG emissions come nowhere near the scale, speed, or scope required, yet many of the means to achieve the necessary transformation already exist.[15] Almost daily, there is promising evolution and acceleration of climate solutions, alongside growing efforts to sunset fossil fuel infrastructure and prevent expansion of these antiquated energy sources.[16]

> **The reality of intervening in a complex system is that no one can do it all, and we all have an opening to show up as problem-solvers and change-agents and contribute in significant ways—even when we feel small.[17]**
>
> – Project Drawdown, The Drawdown Review

14. https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data

15.https://www.unenvironment.org/interactive/emissions-gap-report/2019/

16. https://drawdown.org/sites/default/files/pdfs/TheDrawdownReview%E2%80%932020%E2%80%93Download.pdf

17. https://drawdown.org/sites/default/files/pdfs/TheDrawdownReview%E2%80%932020%E2%80%93Download.pdf

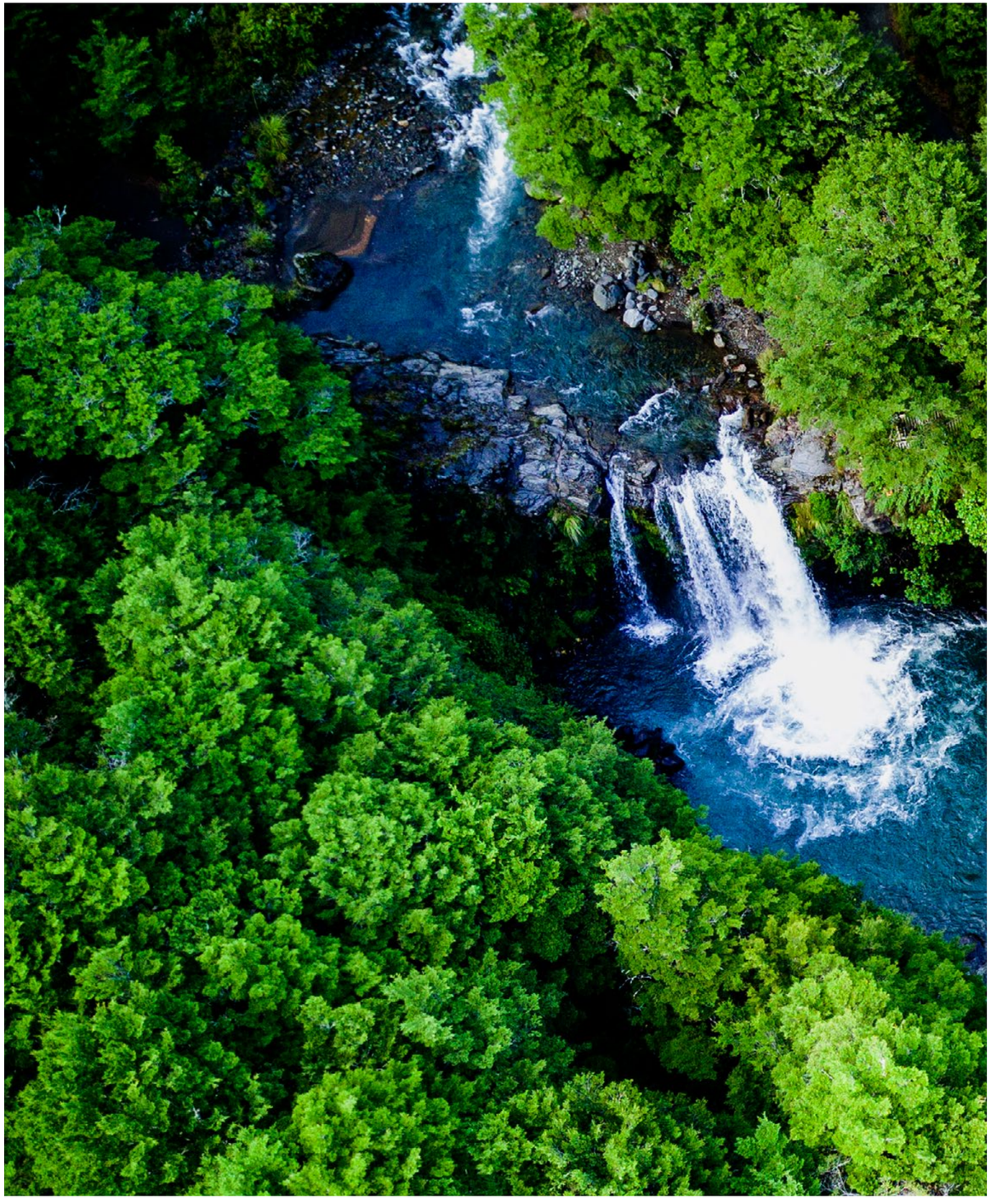
We're in Good Company

Fortunately, we're not alone in our commitment for a sustainable future. More and more companies see their role as a catalyst for making change happen in our lifetime.

The list includes popular brands like:

- Walmart
- Cisco Systems
- Microsoft
- Amazon
- Ikea
- Unilever

These and countless other brands are joining the call by establishing and publicizing their goals toward carbon footprint reduction and other environmentally focused behaviors, which they expect of themselves and the companies with whom they partner.



Our Legacy of Success

Leading impactful changes is the hallmark of Trane Technologies. We have a long and detailed history of success in enabling environmental change for ourselves and our partners. Furthermore, we did this all while continuing along a successful timeline for the growth of our business.

> Case in point: In 2014, Trane Technologies (then Ingersoll Rand) announced an aggressive and unparalleled set of 2020 Climate Commitments with 2013 acting as the baseline.

Here are two of the objectives we set, and the steps taken to accomplish them:

Product Climate Commitment

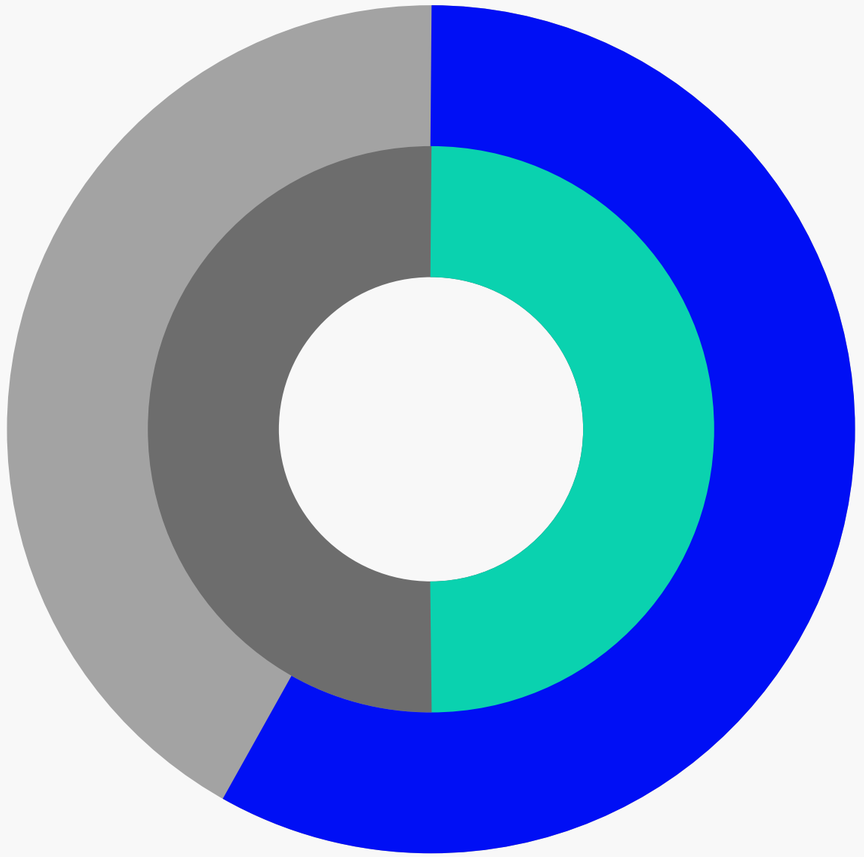
Reduce the greenhouse gas refrigerant footprint of our product portfolio by 50%

Result: We achieved a refrigerant footprint **reduction of 61%** across our product portfolios.

How we accomplished:

- Deployed $500M in R&D to research and innovate with suppliers next generation refrigerants with much lower global warming potentials, and commercialized systems with these new refrigerants well ahead of regulatory deadlines.
- We designed new systems with smaller refrigerant charges and enhanced refrigerant bearing products to minimize leaks over long periods of use.

Commitment Goal vs Commitment Results



Commitment Goal:
50% Reduction

Commitment Results:
61% Reduction

Operations Climate Commitment

Reduce the GHG emissions intensity of our global operations by 35%

Result: We achieved a **50%** reduction in our operational emissions intensity, meaning every $1 USD of revenue generated now requires **50% less** emissions than in 2013.

How we accomplished:

- Effectively deployed capital enterprise-wide on physical upgrades like building envelope improvements, passive heating/cooling techniques, and thermal energy storage systems. Operational energy efficiency increased by 24%.
- Leveraged our own proprietary technology services to enhance building mechanical system automation and energy management and efficiency.
- Began our transition to increased renewable electricity use through on-site installations at three of our manufacturing facilities. Renewable energy now accounts for approximately 25% of our electricity demand.

Commitment Goal vs Commitment Results

Commitment Goal:
35% Reduction

Commitment Results:
50% Reduction

Commitment Summary

Throughout this 6-year timeline, not only were we able to reduce the GHG footprints of our operations and our refrigerant-bearing products, but we also grew our business by approximately 6% year-over-year.

These results highlight the various benefits from our emissions reduction-focused initiatives.

It's our purpose and methodology:

Trane Technologies helps customers do more while using fewer resources.

Pathways for Achieving the Gigaton Challenge

Sustainable development supports, and often enables, the fundamental societal and systems transitions and transformations that will help limit global warming and make our Gigaton Challenge a reality. Such changes facilitate the pursuit of climate-resilient development pathways that achieve ambitious mitigation and adaptation.

Through experience, education, and deliberate planning we've developed a four-tiered set of initiatives. These are the pathways to success we enlist for our customers:

1 Accelerate Clean Technologies

We directly address emissions at the source by developing newer and better ways to heat and cool buildings and homes, as well as to transport perishables.

This includes deploying passive heating and cooling techniques, assisting with data-driven building envelope improvement upgrades, facilitating real-time energy consumption reduction technologies, and shifting electricity demand away from the more costly and high demand cycles in a day. Our solutions provide an opportunity to hasten the transition to a larger mix of renewable energy generation.

2 Address System-Level Energy Efficiency

We go beyond simply providing the highest energy efficiency equipment in the marketplace and take an entire system-level approach to building, home, and transport climate management. Building automation systems and transport logistics offerings empower our customers with real-time coordination of mechanical and transport systems to further enhance energy efficiency, reducing costs and enhancing regulatory resiliency.

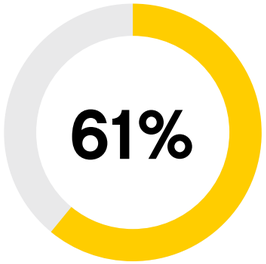
3 Reduce Food Loss in the Cold Chain

Innovating and deploying solutions for effectively transporting fresh food in developing countries will assist not only in avoiding additional emissions released when food decomposes but will also help farmers get more of their product to market. This valuable initiative increases their economic capabilities and ensures more nutritious food makes it to those who need it most.

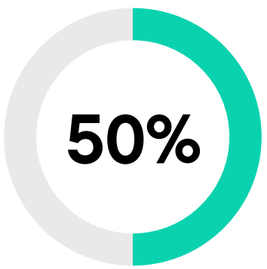
4 Transition Out of High GWP Refrigerants

We are a leader in low GWP HVAC systems for buildings of the largest scale. We began transitioning well before the Montreal Protocol included any HFC transitions and are effectively guiding the rest of the industry to a lower carbon chiller platform. **Our customer-oriented solutions have been sold in more than 30 countries, most of whom have no regulations in place.** This means customers want low carbon technologies with high energy efficiency. We are committed to commercializing lower GWP solutions across our portfolio by 2030, well in advance of the global agreement.

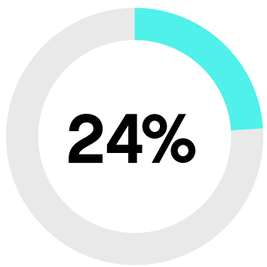
Sustainability and Profitability Can Coexist



reduction in the greenhouse gas refrigerant footprint of our product portfolio.



in **reduction of greenhouse gas emissions** intensity of our operations since our 2013 baseline.



increase in our **total energy efficiency** in 2019 compared to our 2013 baseline

As a company at the forefront of sustainability:

We proudly report that **27 of our manufacturing sites achieved zero waste to landfill in 2019**, and we committed to **zero waste to landfill company-wide by 2030**. We're getting better at sustainable business practices every day, and we can help others get there too.

What's more, effectively managed internal sustainability initiatives can offer substantial business benefits beyond the purely environmental, such as:

- Enhanced profitability from gains in efficiency
- Resilience against future regulatory issues
- Improved employee engagement and participation in sustainability efforts
- Working toward achieving carbon neutrality, which will soon be a key competitive advantage
- Opportunities to explore new eco-friendly areas of business

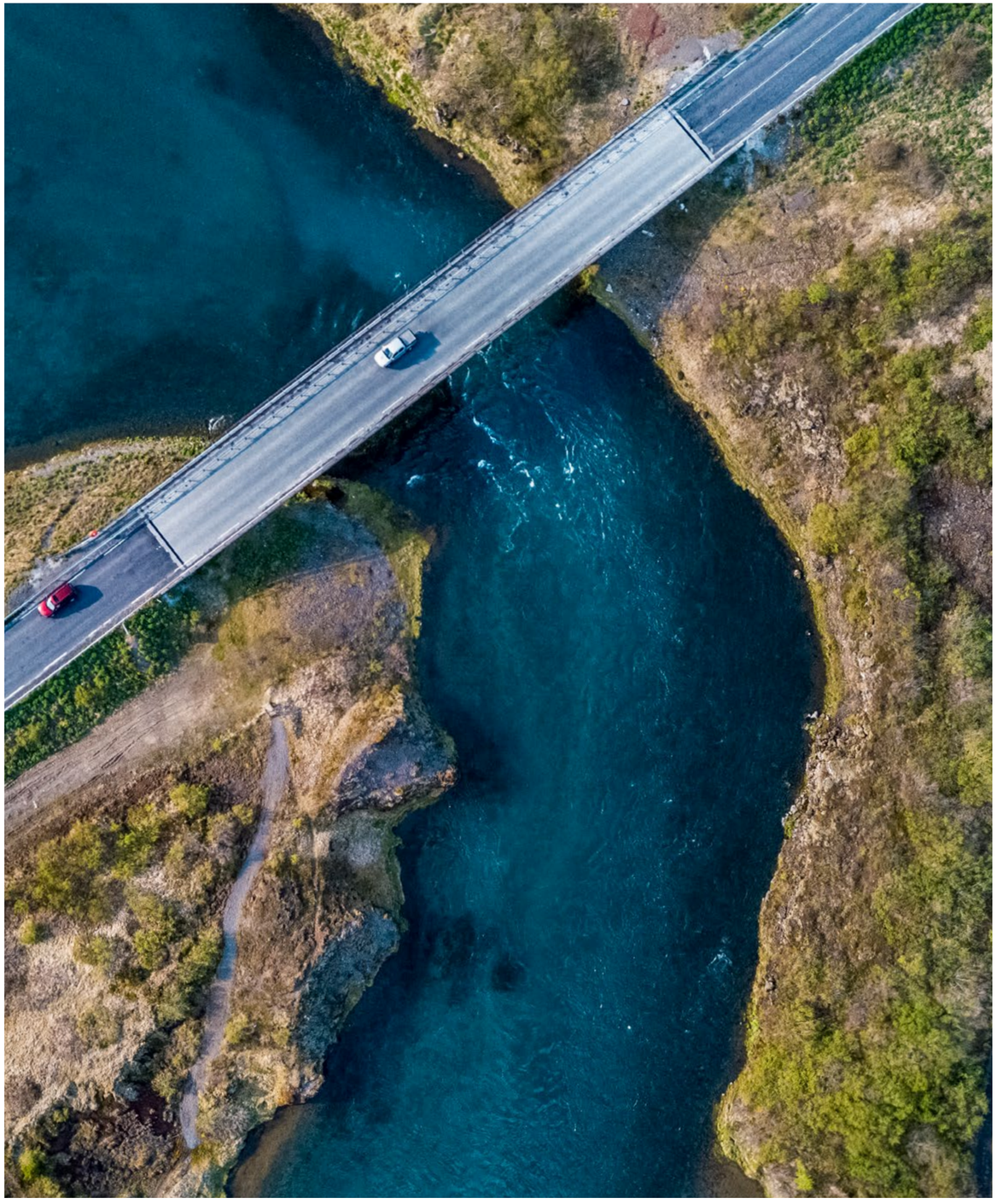
Sustainable business practices are no longer optional for companies that plan to exist beyond the near future—they're essential.

Building Bridges to a Cleaner Future

Our profound commitment to our own sustainability and that of our customers is one and the same. We see our work as building a connection between our proven, earned knowledge and a full-scale, coordinated movement toward energy efficiency and decarbonization of the energy grid.

The Gigaton Challenge is really about connecting solutions for human prosperity. It's about fixing the broken and wasteful parts of our current energy equation. We are actively building a future where homes and buildings can intelligently update mechanical systems, on-demand, to balance responsible energy use while maintaining the high standards of interior environmental quality and comfort our customers expect. We provide infrastructure solutions that can both displace fossil fuel use and dramatically enhance energy efficiency related to heating and cooling buildings, homes and perishables transport. Deploying these solutions at scale will reduce greenhouse gas emissions and help to mitigate the risks that a warming world poses.

We believe that sustainable business practices help us create a healthier future for humanity, and we're honored to be among those leading the charge.



“Our actions are predicated on a strong belief that one company can change an industry, and one industry can change the world.”

– Michael W. Lamach, Chairman and CEO, Trane Technologies

We’re poised to lead and ready to act. Science says the time is now.

We’ve already made a commitment to the world by publishing our Gigaton Challenge, but we’re just getting started—this is a marathon, not a sprint. **Reducing one gigaton of CO_2e from our customers’ operating footprints by the year 2030** is just one goal in a growing campaign of conscientious sustainability.

Trane Technologies has the knowledge, the resources, and the desire to collaborate with other industry leaders to work toward a sustainable, de-carbonized economy.

We’re stepping up our efforts because time is running out, and this mission is far too important to wait any longer.

Fortunately, we’re ahead of the game. **In 2018, we met and surpassed emissions reduction targets we established for 2020.** Achieving this success two years ahead of schedule emboldened us to continue improving our own operational footprint but furthermore to set our customer-facing Gigaton Challenge.

We invite you to do the same.

TRANE TECHNOLOGIES™