



**MARS**

# Net Zero Roadmap

The world we want tomorrow  
starts with how we do business today



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## A Letter from the CEO

I am proud to share the Mars Net Zero Roadmap. Mars believes business can be a power for good and we're committed to doing our part to address the climate crisis. As a family-owned business that has been around for over a century, we take a long-term approach, while measuring our progress via clear milestones along the way.

Our team of 140,000+ Mars Associates is united in the belief that the world we want tomorrow starts with how we do business today. [The Mars Compass](#) and [Five Principles](#) guide our decisions—including our commitment and pathway to Net Zero. We take a broad view on what success as a business means. For us it encompasses strong financial performance, delivering high quality growth, having a positive societal impact, and being a trusted partner. At Mars, we focus on making choices that help us achieve great business results as well as achieving the world we want tomorrow. This isn't a far-fetched idea—we have decreased our greenhouse gases (GHG) footprint 8% since 2015, while increasing sales by nearly 60%. This is real progress!

As I have said before, profit and purpose are not enemies. Investment in climate is not a trade-off between planet and productivity. Or between environment and employment. Consumers and our Associates clearly want both—and so do we. Achieving Net Zero is an investment into our company's long-term success, and it is making a meaningful contribution to a more sustainable and more stable operating environment. It makes our business stronger and engages our people, while driving cost savings, and creating resilience in an uncertain world.

Companies must be judged—Mars included—on the actual results we deliver against our climate plans, not just the scale of the commitment we make—just as we are judged by our boards and investors on the delivery of financial results, not the quality of our financial forecasts. To be a truly successful business, we have to invest in sustainability; and to be a truly sustainable business, we have to be financially successful to make those investments possible.

The Net Zero Roadmap articulates our actions to achieve Net Zero emissions by 2050 across our entire value chain—from the farm to fork to pet food bowl, supply chain to store, and home to veterinary clinics and animal hospitals. Our roadmap is built on science, and what we call the

**Fundamentals of Net Zero.** This foundation of our commitment to climate action is an open-source approach to achieving Net Zero that ensures our progress is consistent with achieving a world where temperature increase is limited to 1.5 degree Celsius to avoid the worst impacts of the climate crisis. To get there, every organization must play its part, so we are sharing this approach with all organizations working to achieve Net Zero.

Creating this roadmap was a team effort of many Mars Associates across all the business. Through it, we have mapped a path to Net Zero—with a nearer-term milestone of halving our full Scope 1, 2 and 3 emissions by 2030. This 50% reduction by 2030 is also a Shareholder objective for Mars. While it will be challenging, our decades of experience working on GHG reduction tells us that Net Zero is both achievable and affordable.

As we refine and evolve our Net Zero plans, we hope to make an even bigger difference in the communities where we live and work in the years to come, and to make real progress on the climate crisis.

**Thank you for being part of our journey to net zero.**



**Paul Weihrauch**  
CEO, Mars, Incorporated





## Letter from Andrew Steer



**President and CEO,**  
Bezos Earth Fund

**Former President & CEO,**  
World Resources Institute

# The Hallmarks of Climate Leadership

There was a time not so long ago when most environmentalists believed that corporations were the problem, not the solution, when it came to climate change. They would, it was widely believed, do the minimum necessary to show green credentials, while maximizing profits and hiding pollution. While this is no doubt still an accurate depiction of some corporations, there has been an astonishing positive shift in both practice and perception over the past few years. Thousands of companies have made voluntary climate commitments and we now understand that corporate leadership is essential to solving the climate crisis.

But while most corporate commitments are sincerely made, not all are effective. Too many corporations mistake good intentions for well thought-through action and too many don't ask the tough questions that must be answered on the path to net zero.

So, how can we distinguish real leaders from the well-intentioned middle-of-the-pack? Over the past few years leading the World Resources

Institute and now in my position at the Bezos Earth Fund I have had the opportunity to engage with, and examine the behavior of, a good number of corporations -- and help lead the setting of standards and development of best practices.

Here are some of the imperatives that I suggest help us to distinguish true leaders. As I read the Mars Net Zero Road Map, I am encouraged and hopeful.

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**Do your homework.** Are net zero goals rooted in the latest climate science? Is there a time-bound and costed plan, with a clear trajectory to 2030 and 2050? Is it subjected to tough questions about barriers and feasibility and endorsed by leading industry authorities, such as the Science Based Targets Initiative (SBTi)?

**Build internal ownership.** Is there an active process to engage all managers and staff in the path towards net zero? Is it presented as an exciting and inspiring journey, attracting the brightest young people to work for the company? Is senior staff compensation linked to progress?

**Be transparent.** Does the company embrace transparency from start to finish to ensure that definitions, performance, and targets are all clear? This also means being honest about the challenges and realities.

**Take Scope 3 seriously.** With Scope 3 emissions accounting for more than 70 percent of many businesses' carbon footprint, does the plan embrace Scope 3 as a core element? Is there an honest recognition that this requires hard work, including negotiating with suppliers, inspiring their commitment to net zero, and measuring and reporting the full value chain emissions? Or are they still complaining that measuring Scope 3 is "too hard"?

**Take people into account.** Is there a recognition that environmental and social justice are interconnected, and that taking people into account is of the utmost importance? Does the net zero plan include indicators of human wellbeing? Companies cannot be successful in changing fast enough without the buy-in of their employees, suppliers, partners, and communities across the full value chain.

**Become a change agent.** Recognizing that no individual company can on its own move the needle adequately, is the company persuading others to join the cause and lobbying for strong, efficient climate policies from government? We cannot have too many hands pushing us towards a net zero future.

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You must make your own judgement as to whether the Mars Net Zero Roadmap exemplifies these elements of corporate leadership on net zero. I believe it does. I am impressed with the analysis, candor, transparency, humanity, and inclusion of a whole-of-company approach.

The science tells us that the window of opportunity to address climate change is closing fast. We know what needs to be done, and it is time to do it, decisively and confidently.

**That is how we will keep moving the needle towards hope, and a better tomorrow.**



# Commitment, History, and Performance



**While the road to net zero won't be easy, we know we can get there with the support of our Associates, suppliers, customers, and partners in civil society.**

## Our commitment to net zero

Achieving net zero greenhouse gas (GHG) emissions is our responsibility as a purpose-driven company — and an opportunity for Mars to build a better, more resilient business for tomorrow. The consequences of a changed and destabilized climate are as challenging for individuals and society as they are for business. Reaching net zero delivers on our promise to all stakeholders in our value chain that the “World we want tomorrow, starts with how we do business today.” We and every other organization must act immediately and decisively to help limit global temperature rise to 1.5 degrees Celsius as outlined in the UNFCCC Paris Agreement.

The Mars Net Zero Roadmap builds on our 2021 commitment to achieving net zero across our value chain by 2050 by articulating how we will get there. As part of our pathway to net zero, Mars is making several major investments, including procuring more renewable energy, pursuing sustainable packaging, improving logistics, optimizing recipes, scaling climate-smart agriculture, and stopping deforestation

in our supply chain. We also are partnering with governments and civil society. To ensure we are on the right trajectory, we have established a target to reduce our total value chain emissions 50% by 2030 from a 2015 baseline. In support of this milestone, we will also be accountable for targets approved by the SBTi using their latest guidance on absolute reductions for energy and industrial emissions and for Forest, Land and Agricultural (FLAG) emissions. The Fundamentals of Net Zero is about more than just targets — it is delivering GHG reductions now and transforming the way our business operates to make that possible. We also expect to enjoy many customer, consumer, and talent benefits coming from our efforts towards net zero.

While the road to net zero won't be easy, we know we can get there with the support of our Associates, suppliers, customers, and partners in civil society. We hope that our plan can also be an inspiration to others who are not yet on the journey or want to learn more.

## Timeline of Mars' Sustainability Journey





# Our Path to Net Zero

Achieving net zero is an investment into your company's long-term success, and making a meaningful contribution to a more sustainable and more stable operating environment.

## 2015 to 2022

In the first seven years of our full value chain work, we set goals and peaked emissions only one year later. This not only decoupled financial growth from emissions, but resulted in the trajectory of each moving in opposite directions (and the right way). As some strategies take time to deliver, our progress will not always be even but — the multi-year trend of emissions reductions will continue toward our target.

## 2022 to 2030

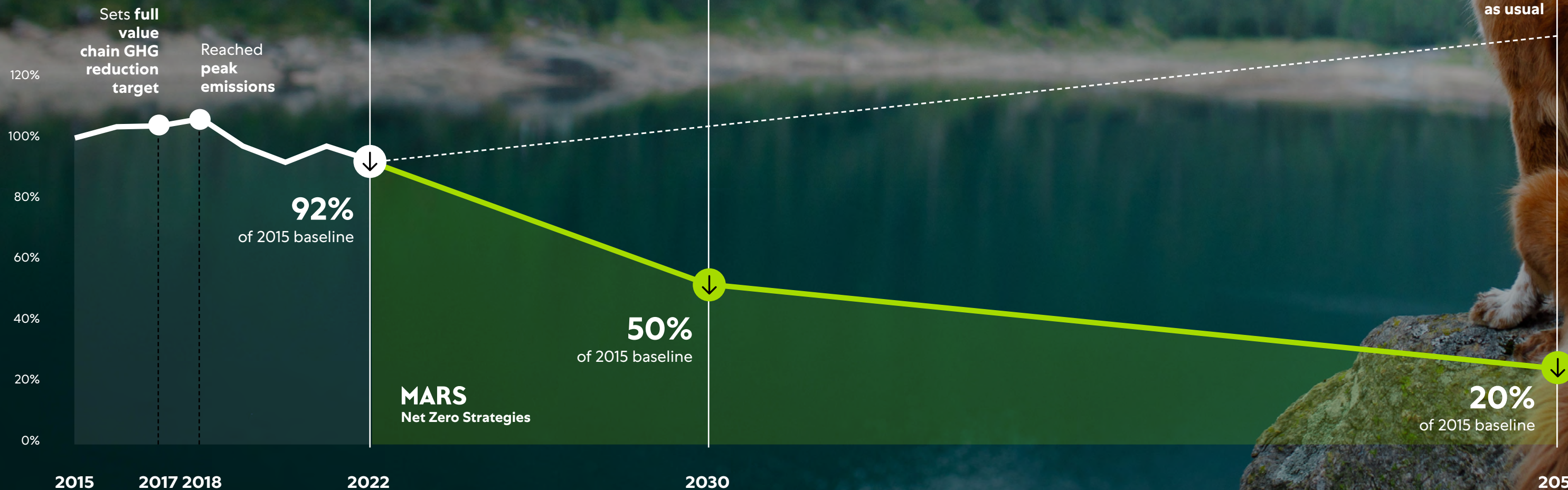
The focus of this Roadmap is about the strategies that will take us to -50% by 2030 and the changes to our business operating model that make that not only possible but affordable. This level of progress requires changes across our entire value chain. This will not be easy but we have the ideas, the resources and the commitment to make it happen. The reductions are built into our business planning and the rolling three year plans that each of our business segments set.

## 2030 to 2050

As things stand today, we believe that the hardest part of the value chain reductions on the way to net zero will be the last 30%. Today, there are significant barriers to solving for those emissions — cost, feasibility, and regulatory, among others. But between now and 2030, we are investing and partnering to find better solutions that will allow us to continue the march to net zero. We anticipate breakthroughs and backsteps alike. As new climate science emerges, we will set future five-year interim targets (e.g., 2035) accordingly.

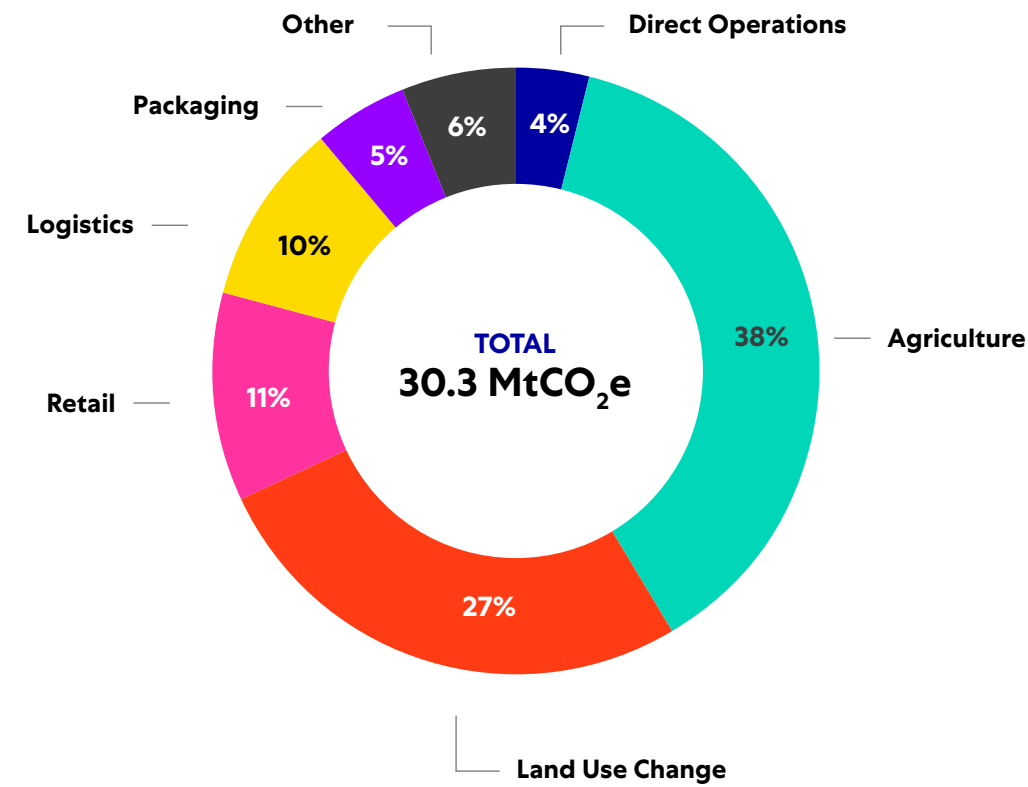
## 2050 and Beyond

As much potential as there is to reduce emissions in our value chain, it is widely recognized by standards such as SBTi that there will be a small fraction of residual emissions that can't be solved for in our value chain. The balance of SBTi energy and industrial, and FLAG sector long-term targets for Mars' portfolio, is an overall 80% reduction. For that small remaining fraction we will use high-quality carbon removal credits to "net" those emissions down to net zero.





**i Our current carbon footprint**



**Direct Operations**

Mars operates a network of factories, offices, laboratories and vet hospitals around the world. These facilities all use energy which creates emissions — some also use planet-warming gases like refrigerants and anesthesia gases.

1.1 Mt CO<sub>2</sub>e

**Agriculture**

We're reliant on farmers to grow crops and livestock for many of our raw materials. Farming and processing crops into raw materials drives emissions from things such as fertilizers, energy use, and methane from livestock and rice.

11.6 Mt CO<sub>2</sub>e

**Land Use Change**

For some key crops, natural ecosystems are cleared to open land for farming. These deforestation and conversion events lead to significant GHG emissions and loss of important natural habitats. Building this into our GHG footprint accelerates action on this critical topic.

8.2 Mt CO<sub>2</sub>e

**Retail**

Distribution of our products includes both stores that use energy and transportation steps that consume fuel — this includes the final mile of consumers bringing our products home or having them delivered.

3.2 Mt CO<sub>2</sub>e

**Logistics**

Transportation of raw materials to our factories and finished goods to our retailers requires fuel and relies on warehouses using energy. Today, much of that transport is done with diesel fueled trucks.

2.9 Mt CO<sub>2</sub>e

**Packaging**

While it plays an important role in reducing food waste, production of packaging also uses energy and creates emissions.

1.5 Mt CO<sub>2</sub>e

**Other**

This includes emissions such as co-manufacturing of our products, inputs for our veterinary hospitals, consumer use phase (e.g., cooking), Associate commuting and business travel and capital assets.

1.8 Mt CO<sub>2</sub>e

**Why now is the time for net zero**

In 1947, Forest Mars Sr. the son of Mars' founder wrote that the sole purpose of the business was to create a "mutuality of service and benefits" to a group of key audiences that today we would call stakeholders. In this letter, he captured the idea that our business succeeds when those around us also succeed. In the 1980s, this idea of Mutuality became one of the Five Principles of Mars, alongside Quality, Efficiency, Responsibility and Freedom. These Principles have guided how Mars operates. More recently, our owners developed the Mars Compass, a set of shareholder objectives defining what success looks like. Two of the seven objectives relate to having a positive societal Impact including clear targets for reduced greenhouse gas emissions.

Following in this tradition of positive impact, achieving net zero is one of our

most ambitious undertakings yet—and we are innovating and investing on a scale necessary to meet the realities the climate crisis demands. In 2022, following on the 2021 decision to shift our long-term target to net zero to stay in sync with the latest climate science, the Mars Leadership Team (MLT) sponsored a process to develop our 2030 target. Looking across our entire global business and our full value chain, they considered the question of "What it would take?" to set and deliver a 2030 target consistent with the science of 1.5 degrees—which meant -50% by 2030. On an accelerated timeline of several months, the MLT engaged with hundreds of Mars Associates to explore more than 500 strategies, resulting in a detailed **marginal abatement cost curve (MACC) analysis**. That analysis led to the three key conclusions listed below.





## Key Conclusions



It is possible to get to a **50% absolute GHG reduction with existing strategies and technologies**—even after planning for business growth



While possible, it will require some significant changes to **how we make decisions about our products, our production and our procurement**. It will also require changes from many of **our suppliers**



Despite the challenge of the aforementioned changes, we believe this process is **affordable while not sacrificing the health of the business**. We estimate that getting to a 50% GHG reduction will cost roughly 1% of annual sales.

The MLT interest in and drive for this ambition shows how the Mars Compass embeds sustainability in the expectations of our business and unlocks a higher level of discussion and capability.

## We can and will do this. Mars has already decoupled our business growth from our GHG emissions.

- In 2017, we made our full value chain GHG commitment with a 2015 baseline—and peaked emissions just one year later in 2018 at 107% of that baseline.
- By 2022 we were down to 92% of our baseline.
- While that 8% reduction is what matters most for the planet, going from increasing GHG emissions 7% in three years to decreasing them 15% in four years shows what's possible—for Mars and all organizations.



We are doing this through a comprehensive approach to reducing emissions—including accounting for all emissions in extended value chains and setting and achieving interim targets with an urgent focus on action now. While the pace of progress will vary year to year, society is beyond the point where we should have peaked emissions. The trend of absolute emissions must head down to that net zero target.

This target was subsequently agreed by our Board and then adopted by our owners, the Mars Family, as a shareholder objective updating a target set previously.

# Net Zero Fundamentals

**Mars believes that anything worth doing is worth doing right.**

While it's encouraging to see more companies establishing net zero goals, only targets that are truly embedded in business operations have a chance of being achieved. To address the worst impacts of the climate crisis in the limited time we have left, we all must act immediately and decisively.





**The rapid changes and extremes in our global climate are driven by humanity's cumulative excess GHG emissions. This includes both emissions currently being emitted and those from the years since humans first industrialized.**

The world is already feeling some of the impacts of a warming world with more frequent and intense extreme weather. Even so, the worst is yet to come due to a lag in the climate system causing past behavior to create more change than we're currently seeing. As laid out by the Intergovernmental Panel on Climate Change (IPCC) in report-after-report, exceeding humanity's carbon budget today means more dire consequences tomorrow. The IPCC warns that to have a 50% chance of limiting warming to 1.5°C, humanity's cumulative emissions from 2022 forward need to be less than 460 gigatons. At current global emissions we will exhaust this budget in just over a decade. [\(ref\)](#)

That's why in addition to focusing on the year net zero is achieved businesses must worry more about how many total tons of GHGs they will emit between their baseline and when they get to net zero. These cumulative emissions (see box) are what really matter to the climate.

To accelerate action, Mars is committed to achieving its **Net Zero Fundamentals** of a linear reduction to our 2050 goals with 2030 as the most important interim step in that journey.

**i**  
**We are running out of time.**

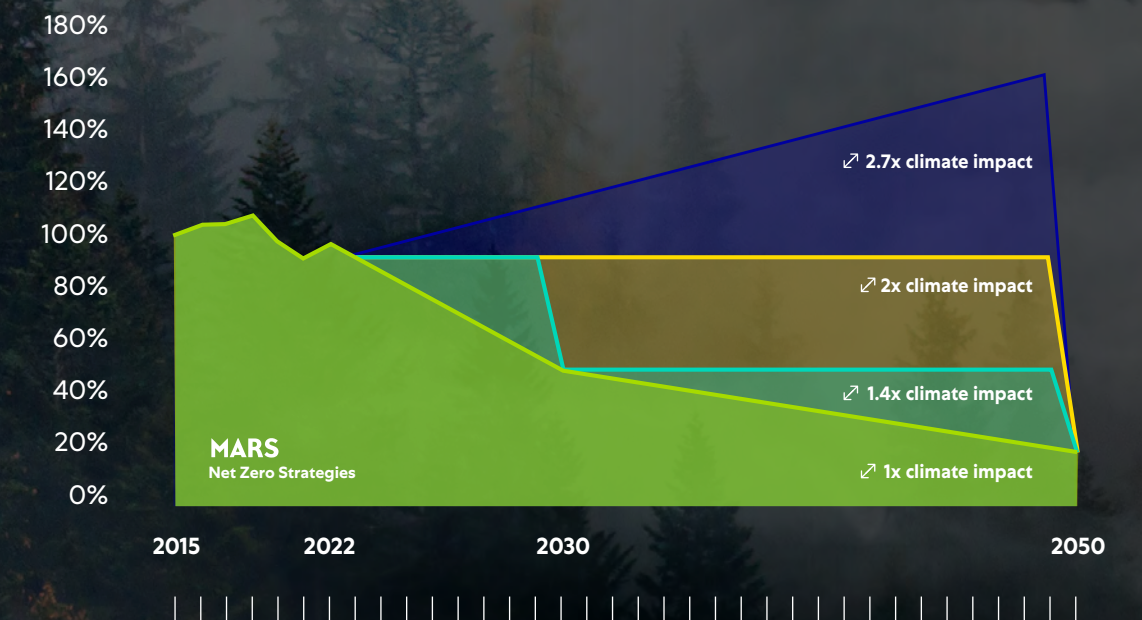
**Now is the time to act.**

▼  
**The longer it takes to reduce emissions, the more of our carbon budget we burn. Holding emissions flat and then dropping to net zero in the last year is double the emissions and double the climate consequences of reducing on a straight line over time.**

**Cumulative Emissions**

Cumulative emissions are the sum of all GHG emissions in all the years until a business achieves net zero. This “area under the curve” is the better measure of a company’s climate impact than its net zero date. Having a net zero goal, an interim target and reducing along a straight line are all critical. To illustrate, the chart below compares value chain emissions under four alternatives:

- 1** Mars' actual net zero commitment to manage to a straight line to our 2030 and 2050 targets
- 2** Having 2030 and 2050 targets but not reducing emissions until the target dates
- 3** Not having an interim target, holding emissions flat and only reducing in 2050
- 4** Not decoupling emissions growth from business growth until 2050





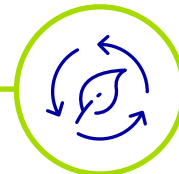
## The Five Fundamental Elements of Net Zero

Net Zero Fundamentals is an approach Mars developed to eliminate GHGs from our entire value chain as quickly and effectively as possible. We created this after years of collaboration with others in the NGO and business communities. Because no single organization can stop the climate crisis, we hope that other organizations can make use of this approach and partner with Mars to further strengthen it.

Here are the five fundamental elements of Net Zero



**MARS**  
Net Zero Strategies



ELEMENT 1

### Include all emissions across the value chain

To make meaningful progress on climate, companies must address the GHGs of their entire value chain through targets, accounting, and strategies. Excluding emissions that are inconvenient or difficult to address—such as downstream emissions from retail distribution or consumer use—will not help achieve the world's climate goals.

Net Zero means taking responsibility for all GHG emissions regardless of the difficulty or cost in mitigating them. Companies can make better design choices for products and services that influence downstream emissions as much as they do the upstream in value chains for raw materials and energy. An added benefit of including all emissions is that this prompts innovation and creativity.

Since 2015, Mars has included emissions from land use change in our Scope 3 emissions tracking. While this increased our GHG footprint, making that quantitative connection to our GHG goals accelerated our deforestation work and has been an important contributor to reducing our overall emissions.

Net zero also means including GHGs beyond carbon dioxide. For an agricultural and food supply chain like Mars', those other GHGs such as methane, nitrous oxide, and refrigerants are important to mitigate. That is why our net zero commitment covers all emissions across our value chain from the inputs needed for farming through to post-consumer use.





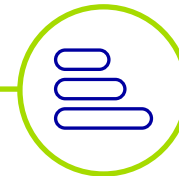


## ELEMENT 2

### Prioritize performance over promises

While we applaud that many companies are making commitments to achieving net zero over the coming decades, words must be translated into actions that yield performance and results. Net zero means taking action to peak absolute emissions as soon as possible after committing to a net zero goal and continuously working to reduce them moving forward.

At Mars, we made our full value chain commitment in 2017 with a 2015 baseline. Our emissions peaked in 2018 just a year later at 107% of that baseline. By 2022, we were down to 92% of baseline—that's 15% from our peak in four years. As we continue our work toward net zero, progress won't be perfect, and some years will be better than others. Our emissions, for example, increased slightly in 2021 before continuing down the following year. As long as the overall trend is moving toward decreasing GHGs, we are broadly on the right track.



## ELEMENT 3

### Mark progress with milestones

Focusing on a goal that is decades out can be difficult even for the most forward-looking companies. To stay on track toward net zero, it's important to make many smaller, shorter-term decisions. While long-term goals provide perspective for net zero, short-term goals drive accountability.

Establishing interim targets of three-to-five years helps hold businesses and their leaders accountable for acting on them and better matches other business planning and decision-making cycles.

At Mars, we are in our third, five-year cycle of our Scope 1 and 2 targets (2015, 2020 and 2025) and the first of our full value chain (2025) and have set 2030 targets for both—all on a straight line of absolute gross GHG reductions. We will continue this pattern of having a long-term goal with five-year milestones.



## ELEMENT 4

### Remember that some decisions today reverberate tomorrow

When it comes to GHG reduction strategies, some decisions are made once and follow you for decades—while others take place more frequently. Net zero means considering carefully those decisions made now that will follow you to 2050 and beyond.

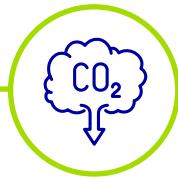
Deciding to buy an electric or natural gas boiler, for example, will impact carbon footprint for the life of that asset. Locating new factories in places that optimize renewable energy access and minimize transport requirements demands long-term planning. Developing new sourcing regions means planning for that region's future climate.

It is also important to recognize decisions with short-term benefits that may not carry a company to the end of the journey. On-site cogeneration of electricity and heat, for example, can be a compelling way to reduce emissions in the short-term—but this increases reliance on natural gas that can be harder to fully decarbonize than electricity.





ELEMENT 5



### Cover what you can't cut with high-quality carbon removal credits

The science captured in the Science Based Target Initiative rules makes clear that most companies cannot get to net zero by only reducing emissions and sequestering carbon in their own value chains. While you must prioritize investing in technologies and processes for directly cutting GHGs, you also will need to use carbon removal credits to cover the residual emissions.

Net zero means investing in direct GHG reduction measures in a company's value chain wherever the technology and practices exist to deliver actual reductions, while building capacity for carbon credits from removals. By doing so, it can ensure that the carbon sequestration the industry needs will be available.

For an agriculture-dominated value chain like Mars', for example, we are expected to reduce about 80 percent of our emissions by investing in solutions such as renewable energy, regenerative agricultural practices, and other measures. The final 20 percent requires securing high-quality carbon credits from removals outside of our value chain. This is the "net" in net zero.



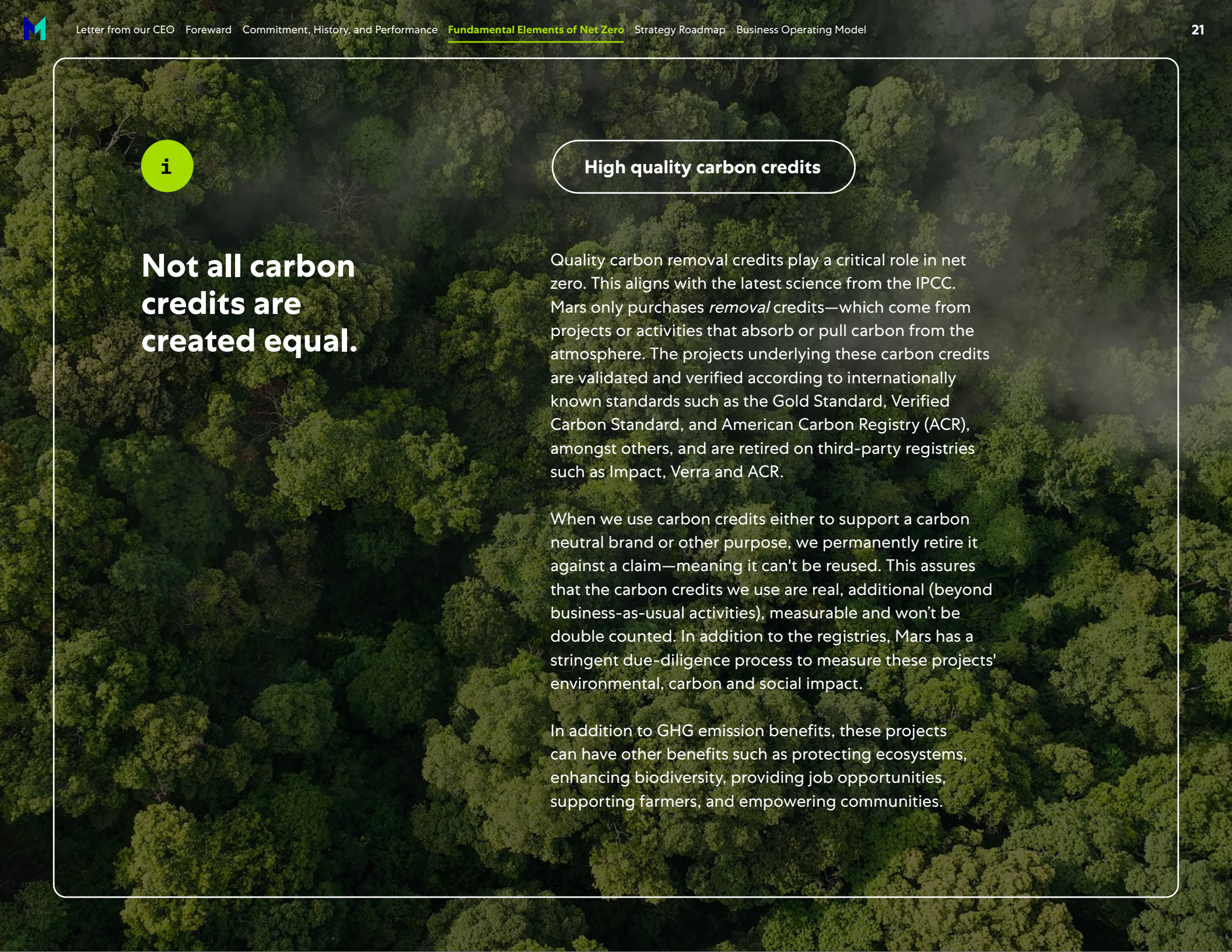
## Not all carbon credits are created equal.

### High quality carbon credits

Quality carbon removal credits play a critical role in net zero. This aligns with the latest science from the IPCC. Mars only purchases *removal* credits—which come from projects or activities that absorb or pull carbon from the atmosphere. The projects underlying these carbon credits are validated and verified according to internationally known standards such as the Gold Standard, Verified Carbon Standard, and American Carbon Registry (ACR), amongst others, and are retired on third-party registries such as Impact, Verra and ACR.

When we use carbon credits either to support a carbon neutral brand or other purpose, we permanently retire it against a claim—meaning it can't be reused. This assures that the carbon credits we use are real, additional (beyond business-as-usual activities), measurable and won't be double counted. In addition to the registries, Mars has a stringent due-diligence process to measure these projects' environmental, carbon and social impact.

In addition to GHG emission benefits, these projects can have other benefits such as protecting ecosystems, enhancing biodiversity, providing job opportunities, supporting farmers, and empowering communities.





## Thinking beyond our business

Mars doesn't operate in a vacuum—we are part of a larger, interconnected world. The actions we take beyond our value chain have consequences. The science confirms that we must consider the larger system and not just our own value chain.

That's why over the past 15 years we have contributed time, energy and resources in various efforts to:



**Moving forward, we will continue to be strong advocates for meaningful action until a net zero world is realized.**

### Develop accounting standards for GHG emissions

we worked with the GHG Protocol, participated in the Value Change Initiative, and collaborated with others in many more instances

### Develop science based target standards

We partnered to help create the Science Based Targets Initiative (SBTi) in 2014 (where one approved method was the "Mars Method"), the SBTi Net Zero standard (including the WWF FLAG process), the kick-off of the SBT for Nature process, and more

### Championed collaboration and adoption across industry sectors

Be it as a founding member of RE-100 in 2014, the Supplier Leadership on Climate Transition (S-LoCT) program for suppliers to set SBTi targets, the Sustainable Markets Initiative to drive regenerative agriculture adoption, or commodity-specific industry coalitions to tackle deforestation

### Advocate for government policies

To support the targets and private sector behaviors consistent with net zero. This includes our work through BICEP (Business for Innovative Climate & Energy Policy), the Sustainable Food Policy Alliance, and other organizations around the world to support efforts such as due-diligence provisions on deforestation, support for the renewable energy sector and efficiency, and many other topic areas that advance the overall climate agenda

# Net Zero Strategy Roadmap

Our Net Zero Strategy Roadmap exemplifies the Net Zero Fundamentals by following all of its five core elements and considering quantitatively how Mars will achieve the first half of our net zero journey. This covers our entire global business and full value chain—meaning we are factoring in emissions even beyond the point of sale.





To help guide our strategy, we developed the following model to help us to understand the possibilities along our path to net zero. →

Like any model, it doesn't capture the full complexity or all the uncertainties, challenges and opportunities of bringing these emissions reduction strategies to life. Nonetheless it has helped Mars dimensionalize that, from what we understand today we believe we can get to our 50% reduction target in an affordable way.

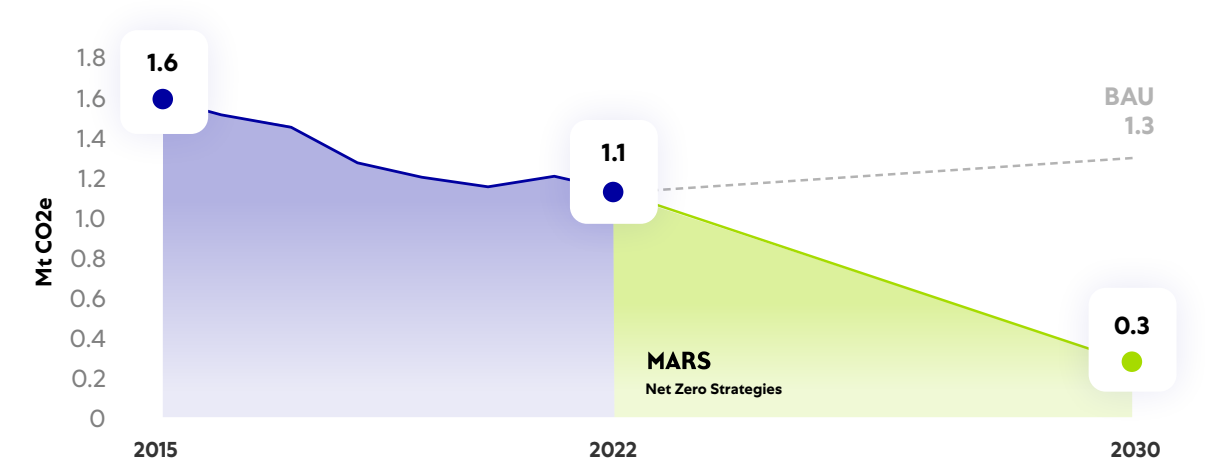
This model is a snapshot of present possibilities, and we expect the specific numbers to change over time as we adjust for the growth of our business and as better accounting standards develop. We also expect to find that some strategies are easier or harder to implement than initially thought; that some won't work; and new ones not currently included in the model will. And some strategies may end up costing more or less than what we expected. We'll also acquire or sell businesses, and we'll need to factor that into our planning.

Our commitment is to the outcome of a 50% reduction—what's shown here is our best view as of 2022 on how we will get there. This is no different than any other major business initiative and strategy—the end objective stays constant while we modify and improve tactics as we learn.

# Direct Operations

With a program beginning in 2009, Direct Operations is the area where we have the most experience and have made the most progress — even before 2015 we had reduced our emissions 25% from 2007. Energy efficiency — from strategies as simple as insulating pipes to those reinventing the way we make our products — helps reduce our need for energy. Meanwhile, we've been shifting quickly towards renewable electricity to sharply cut emissions. Looking ahead to 2030, efficiency and renewable electricity continue to contribute but the more challenging task of switching our thermal energy demands to renewable sources becomes a critical contributor.

## 2030 Footprint



**Renewable Electricity** ⓘ

As of 2022, we were already at 58% renewable in our global electricity usage having focused on the countries where we have the largest energy footprint. Leveraging the continued decline in costs and increasing availability of renewables, this covers the remaining usage in other countries in which we operate through a combination of offsite and on-site projects.

**0.4 Mt CO<sub>2</sub>e**

**Renewable Thermal** ⓘ

We're at an earlier stage in tackling thermal energy and have worked alone and collectively (through the Renewable Thermal Collaborative, which we cofounded) to remove and overcome barriers to renewable thermal deployment. Some progress in this area will come through electrification (e.g., using heat pumps to recover and upgrade waste heat from electrical processes). In other areas we will need direct thermal solutions such as biogas from anaerobic digestion, biomass from waste streams and concentrated solar thermal.

**0.5 Mt CO<sub>2</sub>e**

**Energy Efficiency** ⓘ

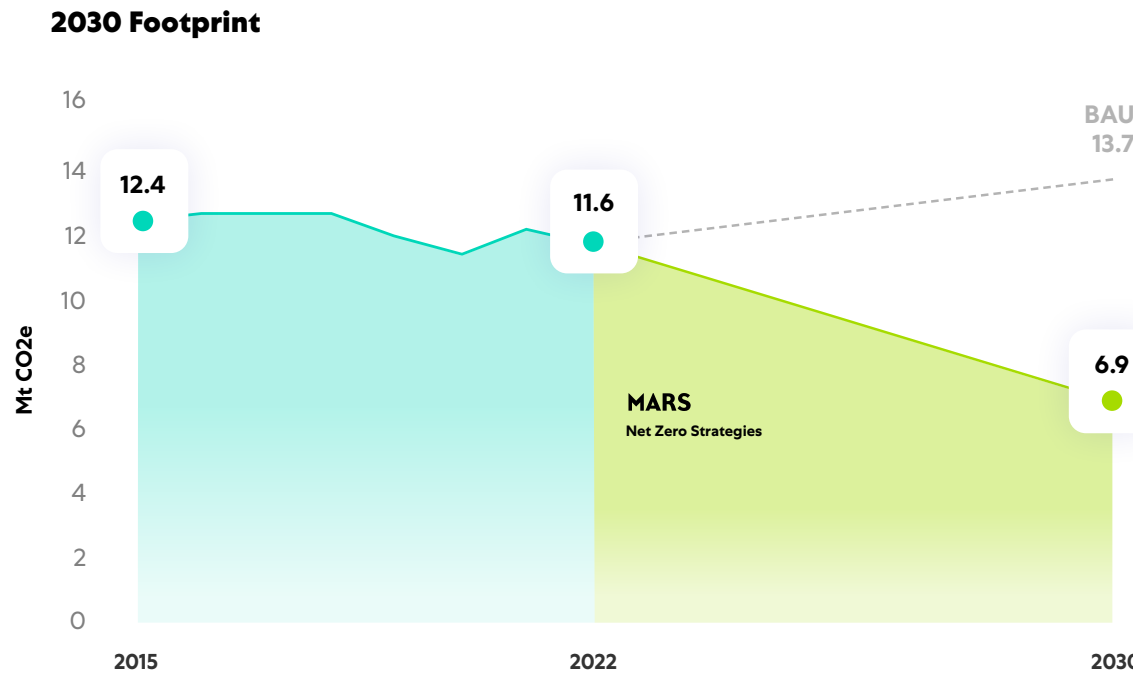
While efficiency is always the first strategy to focus on, we are 15 years into our efficiency journey so have captured much of the low hanging fruit. Continued progress comes from more incremental improvements and newer technologies. Between refrigerants used in our factories for cooling process to anesthetic gases used in our veterinary hospitals, there are also opportunities to switch to lower GWP/climate impacting alternatives and minimize leakage.

**0.1 Mt CO<sub>2</sub>e**



# Agriculture

Growing crops and producing the raw materials Mars uses is both the biggest part of our footprint and one of the most challenging. We have early overall progress through 2022 with a smaller GHG footprint from more metric tons of raw materials than 2015. This is a combination of recipe changes that enable shifts to lower footprint materials and early results from our work in some crop supply chains. We are already investing widely in climate smart agriculture across our raw material supply base either to expand pilots or launch new initiatives. These multi-year initiatives often stretch across crop rotations and harvest cycles and both reduce emissions and sequester carbon in soils and biomass such as cocoa trees. While we believe in the potential of carbon sequestration on farm, given the evolving accounting guidance, for this modelling through 2030 we have not included those benefits.



## Sourcing and Recipe

### Optimize Sourcing

Different suppliers and farms operate at different carbon intensities because of production practices. Adding carbon intensity to the differentiating criteria among suppliers (alongside quality, price and other factors) has the opportunity to drive competition and innovation in our supply base. It also lets us reward farmers and suppliers who have acted early to reduce emissions. In some cases, this could mean changing suppliers or geographic shifts in sourcing.

1.6 Mt CO<sub>2</sub>e

### Process / Distribution Optimization

While we are already zero waste to landfill from our factories, not every metric ton of raw material makes it into a finished product in the market. Finding ways to reduce small amounts of product not meeting quality specifications or lost during distribution lets us make more with less.

0.3 Mt CO<sub>2</sub>e

### Reformulation

While changing product formulation can be challenging because there are many relevant constraints (e.g., consumer perception, regulatory standards and nutritional requirements), there are opportunities to further optimize and drive development of novel ingredients and production practices to further lower GHGs.

0.7 Mt CO<sub>2</sub>e

## Climate Smart Agriculture (CSA)

### Renewable Electricity

While there are significant agriculture and land-based opportunities, a meaningful portion of agricultural value chain emissions are from energy and industrial source such as fertilizer production and on farm energy use. Even focusing in the short term only on the electricity use and converting it to renewable sources represents a significant opportunity with little to no impact on the farming process.

1.7 Mt CO<sub>2</sub>e

### Dairy

There are opportunities to reduce methane emissions from dairy production via nutrient management plans, feed additives and manure management (such as the use of anaerobic digestion), as well as integrated livestock farming. The same regenerative agriculture practices that benefit our direct crop usage deliver benefits in the production of dairy feed.

0.8 Mt CO<sub>2</sub>e

### Other Crops

Embracing regenerative agriculture across row and grain crops can protect soil health and biodiversity through the use of cover crops and reduced tillage, while reducing carbon emissions from soil disturbance. Longer term partnerships with farmers and suppliers can help unlock these opportunities.

0.6 Mt CO<sub>2</sub>e

### Rice

Programs like alternate wetting and drying (AWD) rice farming offer reductions in methane and water usage while maintaining yields and improving incomes for farmers. Continuing to scale adoption from our existing programs expands the impacts and benefits to our sourcing regions around the world.

0.3 Mt CO<sub>2</sub>e

### Proteins

The same regenerative agriculture practices that benefit our direct crop usage deliver benefits in the production of feed for the livestock that provide proteins and fats. Manure management is another opportunity to reduce emissions and return nutrients to the soil.

0.4 Mt CO<sub>2</sub>e

### Other

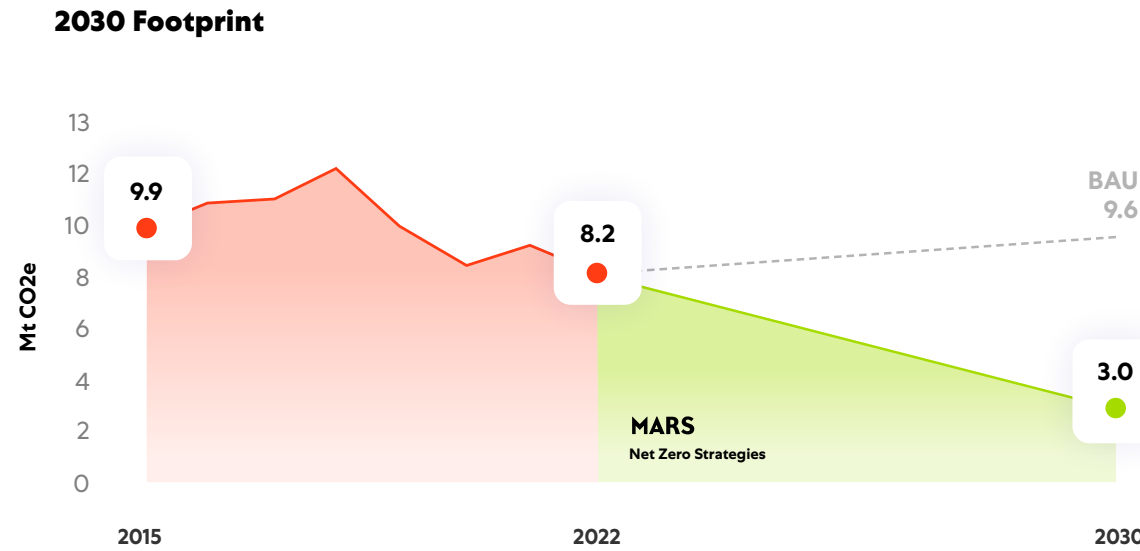
Other opportunities remain to increase soil GHG sequestration or decrease on-farm emissions through, for example, advanced targeted fertilizer application, increased yields, and energy efficiency projects.

0.4 Mt CO<sub>2</sub>e



# Land Use Change

Land use change is the second biggest driver of our of emissions, and is the area where we've made the most absolute progress and also has the biggest additional potential contribution through 2030. Our Map-Manage-Monitor strategy maps our supply chains to identify deforestation and conversion risk, manages those supply chains by working with suppliers and monitors compliance to deliver on our policies and contribute to reducing our emissions. Our Responsible Cocoa Program will deliver deforestation and conversion free cocoa by 2025, and our detailed satellite mapping and sourcing decisions have played an essential role in these results as has our work in the Palm Positive Plan. Completing the work in cocoa, and actions already taken and planned in other commodities, will pay dividends through 2030 and beyond.



## Cocoa

More than five million farmers in West Africa, Southeast Asia and the Americas grow cocoa, often in areas where deforestation is an issue. Achieving a deforestation- and conversion-free supply chain for 100% of the cocoa we source (via mass balance) by 2025 is the single largest and most significant first step Mars can take towards delivering on our ambition. This is a critical part of our Responsible Cocoa Today program.

4.5 Mt CO<sub>2</sub>e

## Direct Soy / Beef

Rising demand for soy and beef has led to the conversion of natural ecosystems into plantations, which can result in social and environmental damage. We are working not just with suppliers but other buyers to manage and redesign our supply chains and support industry transformation.

0.4 Mt CO<sub>2</sub>e

## Indirect Soy

In addition to soy ingredients Mars procures directly to make pet food, soy is also relevant as a feed ingredient for animal farming, which produces protein and fat ingredients for pet food and dairy for chocolate. This indirect soy is a unique challenge, because these supply chains are among Mars' most opaque and remote. We are piloting a supplier engagement process with identified priority animal protein suppliers to ensure continuous improvement towards best practice.

1.1 Mt CO<sub>2</sub>e

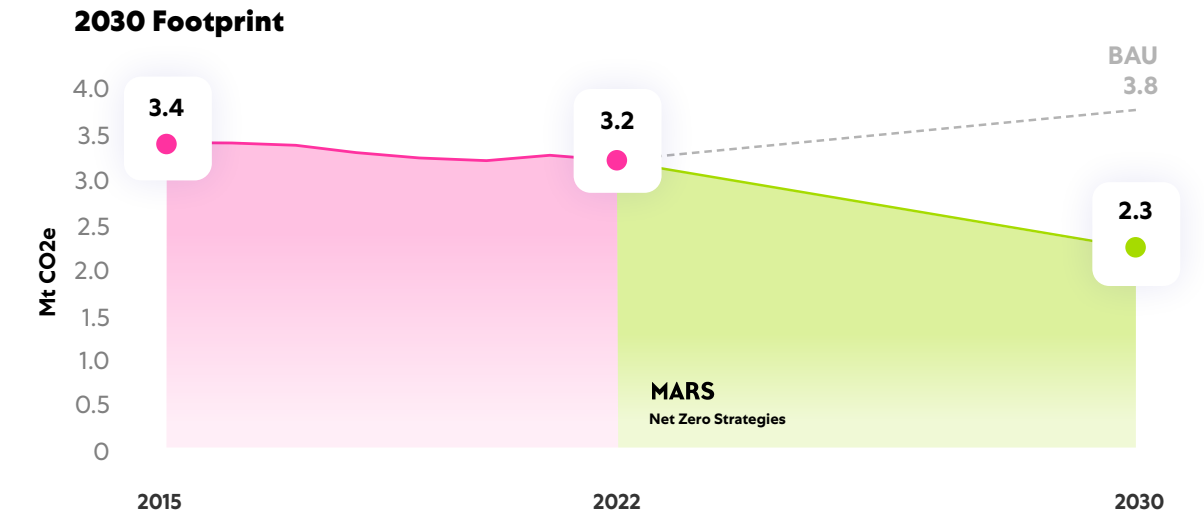
## Other Crops

Development and a growing global population has led to rising demand and agricultural expansion across the globe, often at the expense of natural ecosystems. We have already made progress in Palm and Pulp/Paper, but there are other crops where initial indications are that land use change is an issue.

0.7 Mt CO<sub>2</sub>e

# Retail

While we have hundreds of factories, our products make their way to billions of consumers through a wide range of retail distribution channels from traditional brick-and-mortar stores to digital commerce channels. This is a newer area of focus for us so our results through 2022 reflect general shifts in our business and some retailer progress. Looking ahead, we're excited about the potential to partner with our retailers to accelerate progress on their goals and ours. The shift towards digital commerce also appears to be a tailwind as the last mile of delivery is with a highly utilized delivery truck rather than individual consumer vehicles.



## Renewable Electricity

Electricity is the dominant energy source in retail distribution for stores and warehouses for lighting and refrigeration, as well as space heating and cooling. We will continue working with our retail partners to move towards renewable electricity in these areas.

1.3 Mt CO<sub>2</sub>e

## Retail Logistics

Similar to our own work on logistics, our retail partners operate logistic networks from warehouses to stores and in some cases all the way to the end consumer's home. The same opportunities of network efficiency, transport mode switching and fuel switch apply to this retail portion of distribution.

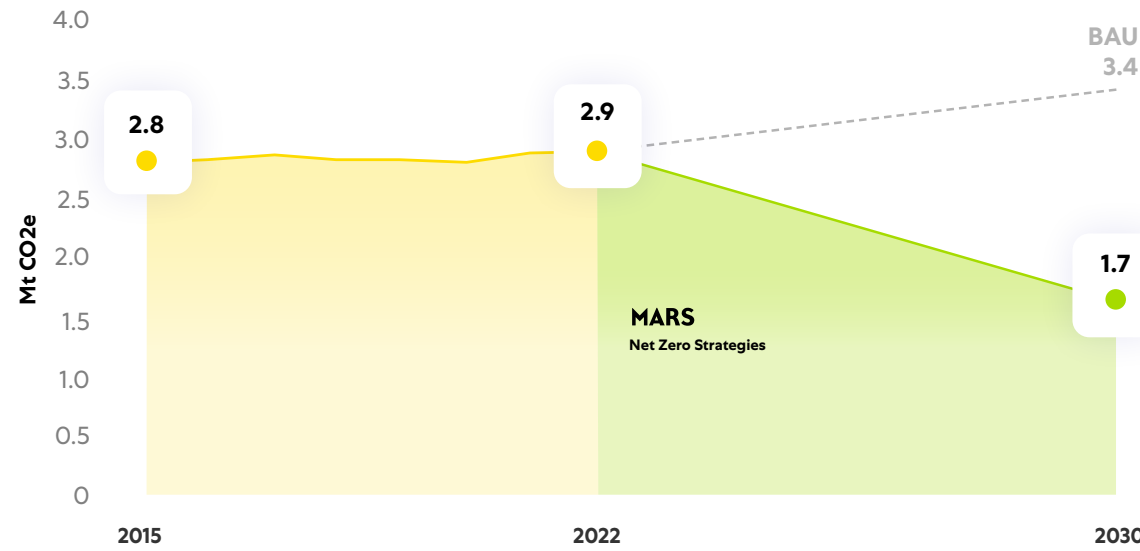
0.2 Mt CO<sub>2</sub>e



# Logistics

Focused on delivering ingredients to Mars and finished goods to customers, our logistics footprint is flat versus 2015. This reflects early efforts on efficiency that have been balanced out by needs to keep supply chains operating effectively. Looking ahead, we see more radical efficiency opportunities as well as more transformational strategies that redesign our networks, the type of transport they rely on and the energy sources they use.

2030 Footprint



## Efficiency

We are continuously exploring ways to reduce the distances our products move and increase the utilization of the vehicles moving them. This requires a combination of both improved network design and operating behaviors.

0.5 Mt CO<sub>2</sub>e

## Mode Switching

In some transport lanes we can develop the option to switch away from trucks (generally the highest GHG transport mode) to lower GHG options such as rail or water. This is already a feature of our network, but non-truck usage can be increased.

0.3 Mt CO<sub>2</sub>e

## Fuel Switching

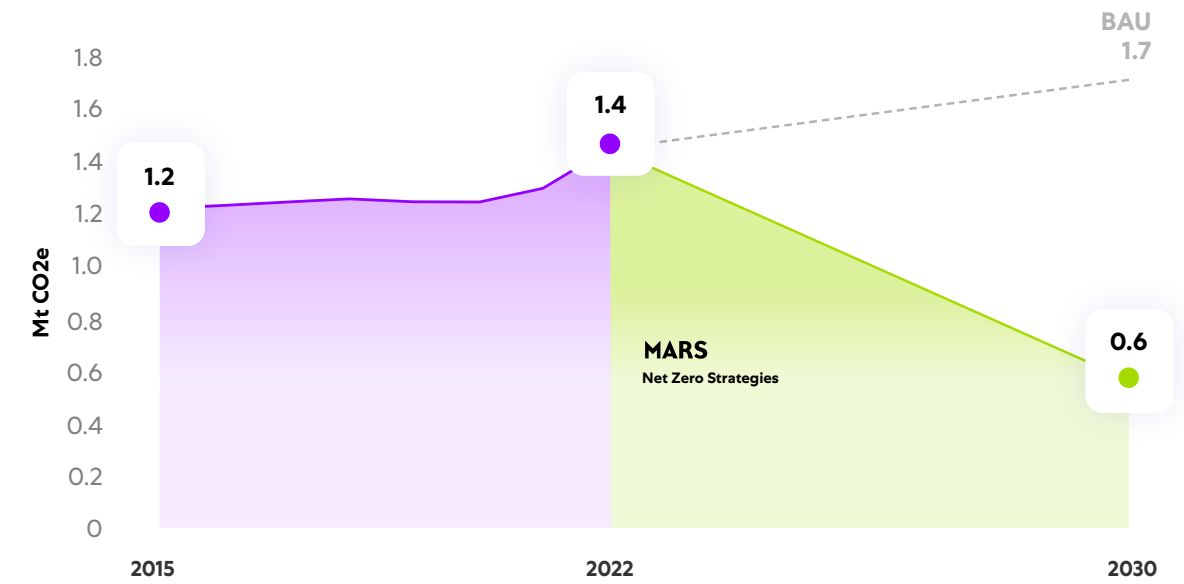
The vast majority of today's land-based transport networks are fueled by diesel. Switching to biodiesel blends, or going even further into hydrogen or electrically powered vehicles, can offer significant reductions—particularly starting with the shorter routes.

0.9 Mt CO<sub>2</sub>e

# Packaging

One of the most important challenges we face is rethinking our packaging to be recycled, reused, or composted rather than becoming waste. Many of the design and material changes we make in service of that goal – such as use of recycled content – can contribute to our GHG objectives. In addition, there are consumer transparent opportunities in process efficiency and wide deployment of renewable energy in our packaging value chain that can step change our results through 2030.

2030 Footprint



## Renewable Electricity

As a technologically driven value chain, significant emissions in packaging production come from energy use. A wide adoption of renewable electricity can reduce these emissions.

0.2 Mt CO<sub>2</sub>e

## Process Efficiency

Much like in our own factories, opportunities to make packaging production processes even more efficient through less energy use and reduced waste represents an opportunity.

0.3 Mt CO<sub>2</sub>e

## Material Design

There are a range of packaging design choices that impact GHGs—some of which support our work on designing packaging for circularity. This includes switching materials, moving to mono-material plastics and continued weight reduction.

0.6 Mt CO<sub>2</sub>e

## Recycled Content

There is a strong synergy between our goals to increase use of recycled content and reducing GHGs as recycled materials generally have lower footprints than virgin materials. Increasing availability of food-safe recycled material is a critical enabler of this benefit.

0.1 Mt CO<sub>2</sub>e

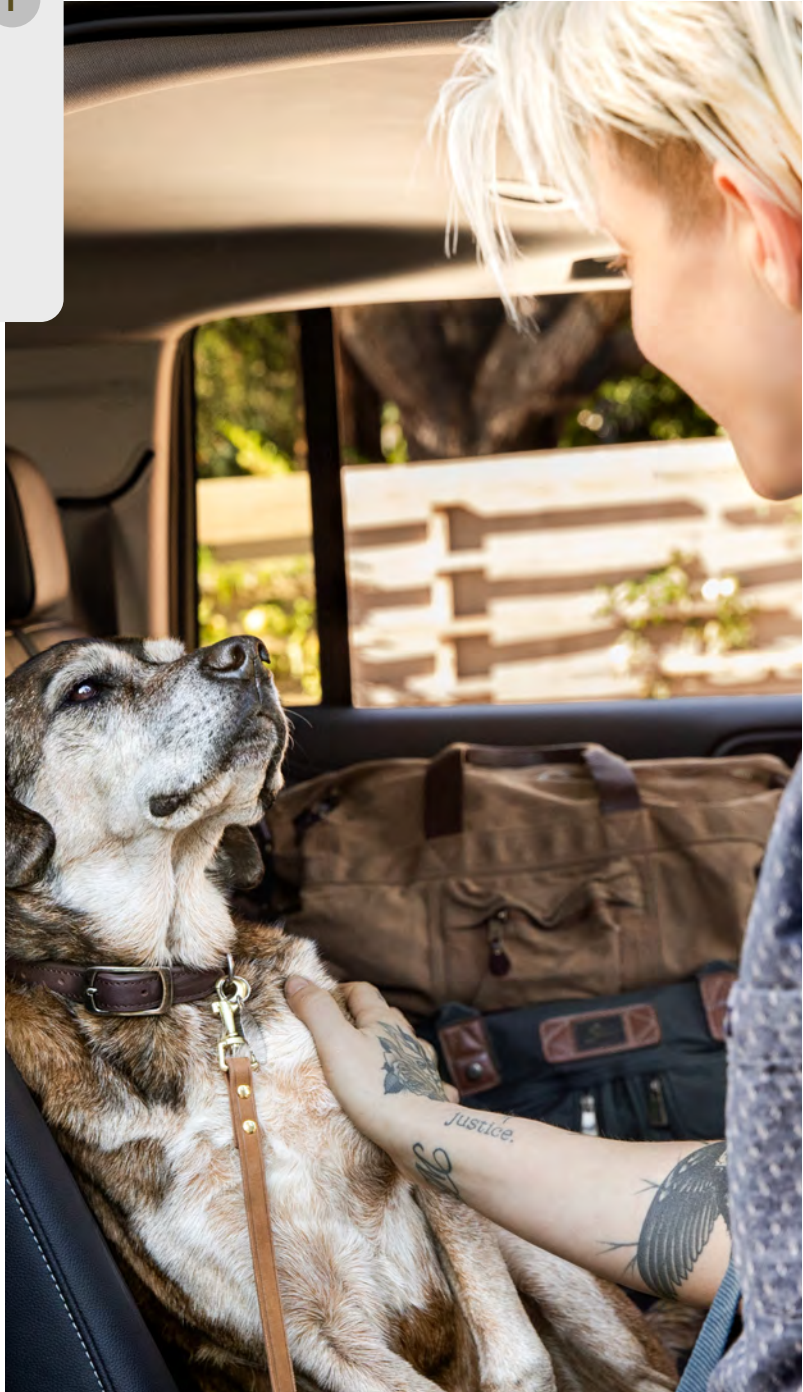


# Other

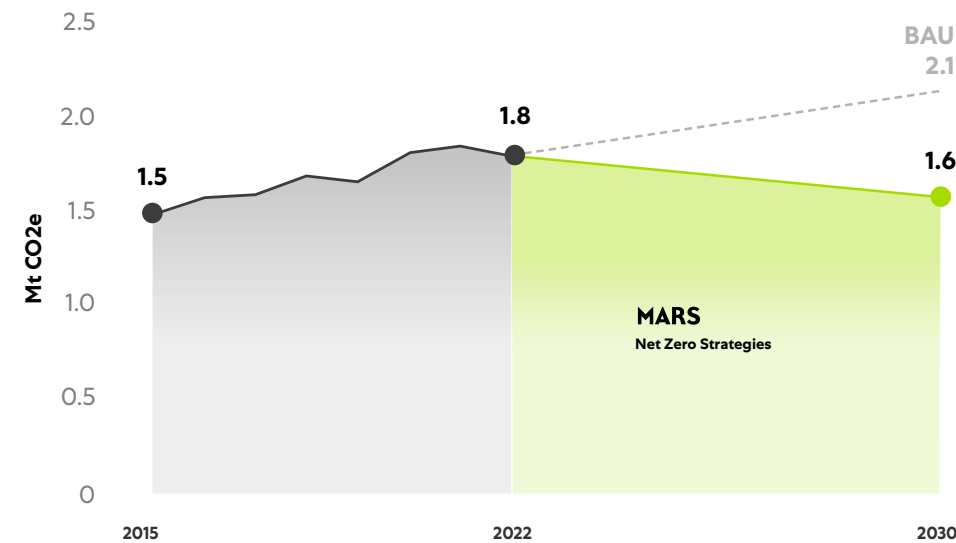
Beyond the major categories of emissions lies a long tail of other drivers of emissions where we are still investing time in improving our understanding and developing strategies. Examples include co-manufacturing of our products, inputs for our veterinary hospitals, the consumer use phase (e.g., cooking), Associate commuting, and business travel and capital assets. While we improve our accounting, we have some strategies to drive efficiency and deploy renewables.

**i** There is a long tail of additional smaller actions we're working on ranging from renewable energy for co-manufacturing to Associate commuting to our digital footprint to reducing business travel.

**0.5 Mt CO<sub>2</sub>e**



## 2030 Footprint



**i**

# Driving net zero action through renewable energy

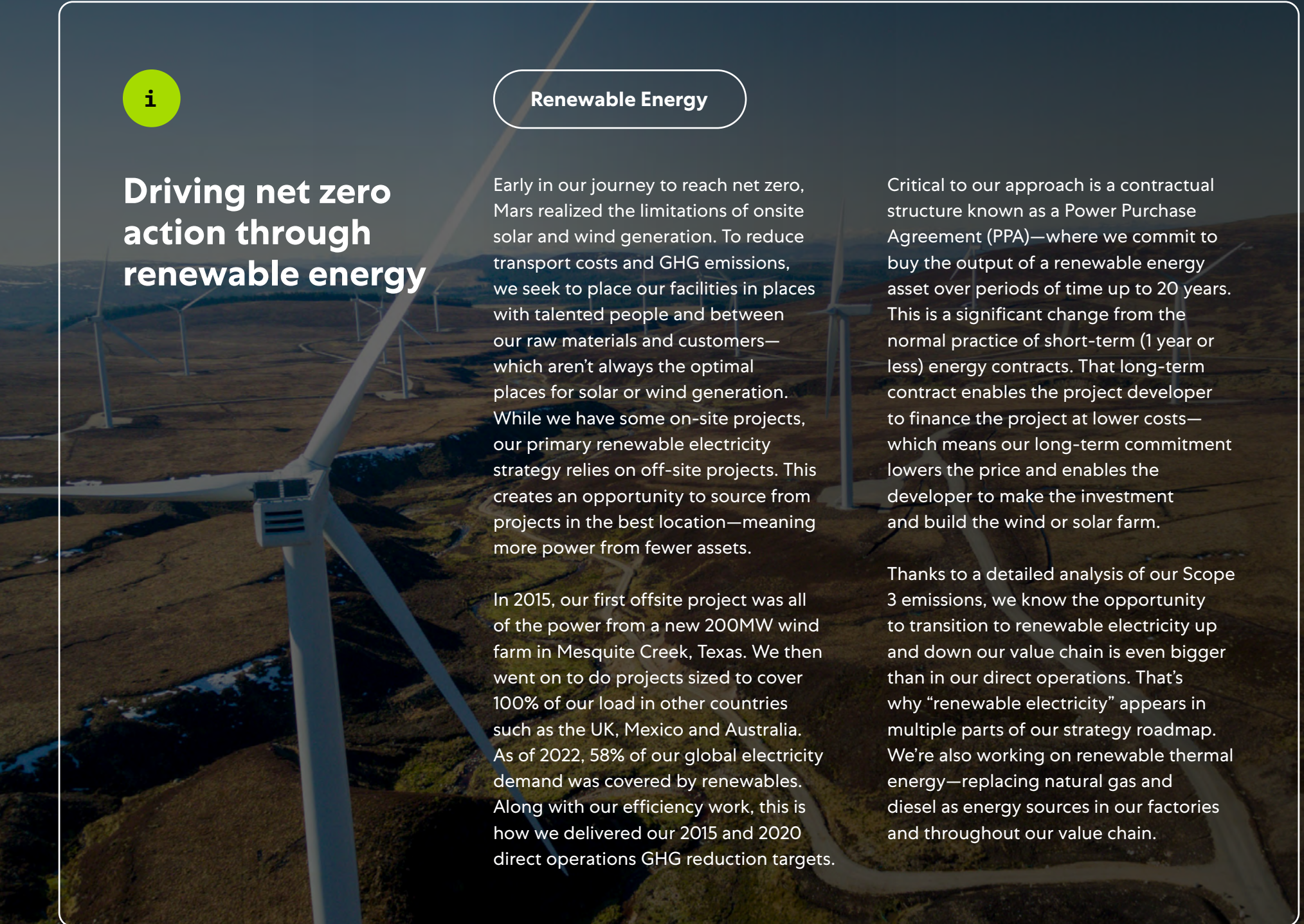
## Renewable Energy

Early in our journey to reach net zero, Mars realized the limitations of onsite solar and wind generation. To reduce transport costs and GHG emissions, we seek to place our facilities in places with talented people and between our raw materials and customers—which aren't always the optimal places for solar or wind generation. While we have some on-site projects, our primary renewable electricity strategy relies on off-site projects. This creates an opportunity to source from projects in the best location—meaning more power from fewer assets.

In 2015, our first offsite project was all of the power from a new 200MW wind farm in Mesquite Creek, Texas. We then went on to do projects sized to cover 100% of our load in other countries such as the UK, Mexico and Australia. As of 2022, 58% of our global electricity demand was covered by renewables. Along with our efficiency work, this is how we delivered our 2015 and 2020 direct operations GHG reduction targets.

Critical to our approach is a contractual structure known as a Power Purchase Agreement (PPA)—where we commit to buy the output of a renewable energy asset over periods of time up to 20 years. This is a significant change from the normal practice of short-term (1 year or less) energy contracts. That long-term contract enables the project developer to finance the project at lower costs—which means our long-term commitment lowers the price and enables the developer to make the investment and build the wind or solar farm.

Thanks to a detailed analysis of our Scope 3 emissions, we know the opportunity to transition to renewable electricity up and down our value chain is even bigger than in our direct operations. That's why "renewable electricity" appears in multiple parts of our strategy roadmap. We're also working on renewable thermal energy—replacing natural gas and diesel as energy sources in our factories and throughout our value chain.





## Measurement Operating System

The first principle of Net Zero Fundamentals is to include all GHG emissions across the value chain in reporting and targets. In practice, there are several additional ideas behind our approach to calculating our GHG footprint:

### Estimate and iterate

One of the biggest challenges of climate action is the fact that GHG accounting is still in its infancy, and the climate community continues to develop the rules, standards, data sets and expertise. While the challenge of measuring Scope 3 can result in the exclusion of some or all of these emissions from a corporate climate program, Mars believes that all GHG emissions can and should be estimated. When we started our climate journey in 2007, making those estimates was challenging with the limited data and tools available. Today, there is enough of a knowledge base, expertise, consultants and tools available to enable credible and reliable estimates.

Unlike financial accounting, all value chain GHG accounting is based on estimates and modeling. While sales revenue shows up as a deposit in a bank account, GHG emissions are almost never directly measured. We measure business activities (kilowatt-hours of electricity, kilometers driven, kilogram of fertilizer, etc.) and then multiply by relevant emissions factors to calculate the associated GHG emissions. Those emissions factors are based on measurements and modeling—which are improving all the time.

We believe nothing will drive faster improvement in data quality than making the number matter by tying it to your targets. As long as getting a better number is an academic exercise, it will never get better. Materiality is a concept that applies to where to pursue reduction strategies and better data—not to where you do GHG accounting. Even the smallest business units report sales and expenses into corporate accounting functions.



### Complexity is an opportunity

While it's possible to make a simple estimate of emissions for all the parts of a business's value chain, developing more sophisticated GHG calculations is an opportunity. A major current area of work for us is the development of supplier- and product-specific GHG impact factors. Developing these in a way that maintains methodological consistency across our reporting is a significant challenge but well worth the effort, because it then lets us differentiate among suppliers of the same raw material and lets us track and reward improvements made in our value chain.



### Baseline restatement

Restatement of baselines is an inevitable feature of a net zero plan and will be for some time to come. This is a feature—not a bug. Better estimates and better emissions factors enable better understanding and create more opportunities to drive down emissions. There are two major drivers of baseline restatement—methodology changes and acquisitions/divestments.

We are continually working towards more sophisticated and accurate calculations of our GHG emissions. When we update those methods, we need to extend that update back to our 2015 baseline to ensure comparability of today's performance and that baseline. This can be a challenge as the data we have today isn't always available for 2015, so we use a decision-making hierarchy for how to make those corrections.

With acquisitions and divestments, the right approach is to have the baseline and historical performance move with the ownership. In the case of an acquisition, this means adjusting Mars' GHG inventory starting in 2015 to appear as if that company had always been part of Mars. In the case of divestment, we remove the emissions from 2015 to the present from our accounting.







# Business Operating Model

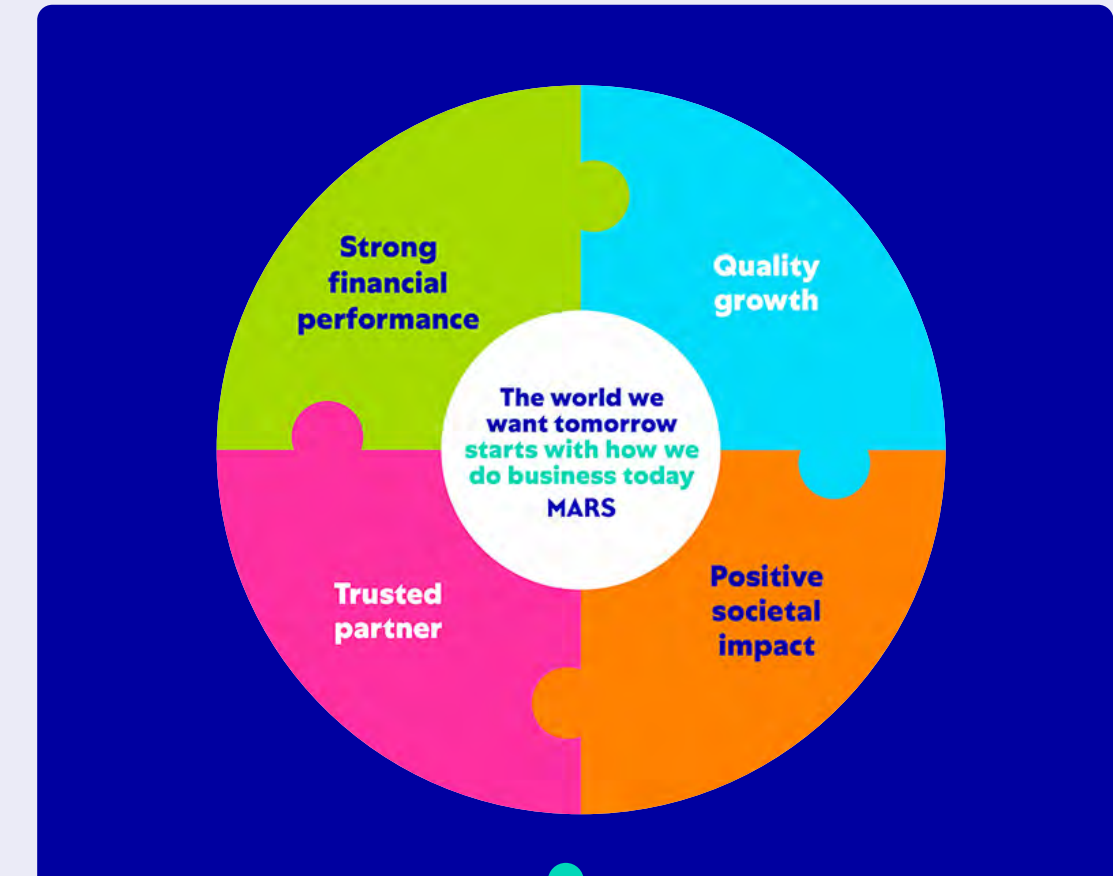
**Mars has been a family-owned business for over a century.**

Like any business, we set measures to track our progress. But unlike just any business, we are a company owned by a Family that thinks in generations. We guide ourselves by The Five Principles, and firmly believe what has made us successful is more than just thinking about the bottom line. A business model that focuses exclusively on financial performance is not sustainable or desirable.

While we haven't historically shared our point of view on how we measure the success of our evolving business, today's world calls for a change. We believe in business as a power for good, and we're committed to doing our part. For 140,000+ Mars Associates, the world we want tomorrow starts with how we do business today.

In 2018, the Mars Family, owners of Mars, Incorporated, introduced the Mars Compass to ensure we're heading in the right direction. Anchored by our Purpose, the Compass establishes expectations from the Family for how we should lead our business and provides a clear definition of success. It ensures that we link purpose and performance and gives us the freedom to think in generations, not quarters. As both a principles and purpose-led business, we're focused on making choices that help us achieve near-term results without compromising on the world we want tomorrow.

Our Compass is a set of objectives as well as a philosophical approach. It has four quadrants which both guide our long-term strategy and measure our progress against medium-term and day-to-day decisions. They are:



### Financial performance

Top-tier performance that gives us the freedom to create the world we want tomorrow

### Quality growth

Momentum and growth in our brands and categories, and the exploration of new opportunities, to help us grow for the next 100 years

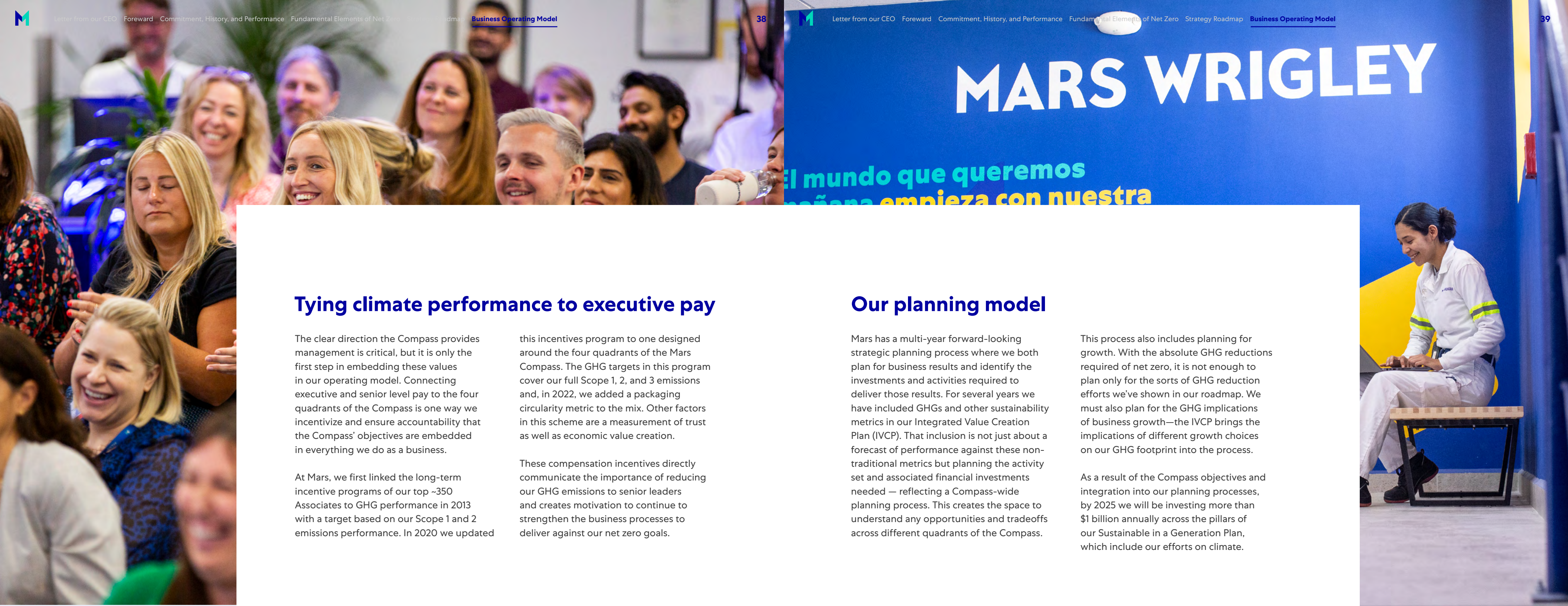
### Trusted partner

The response we see from stakeholders on how we are living up to our commitments and their expectations of Mars as a business

### Positive societal impact

Our commitment to helping people, their pets and the planet thrive, which in part we're working to deliver through our Sustainable in a Generation Plan





# MARS WRIGLEY

El mundo que queremos  
mañana empieza con nuestra

## Tying climate performance to executive pay

The clear direction the Compass provides management is critical, but it is only the first step in embedding these values in our operating model. Connecting executive and senior level pay to the four quadrants of the Compass is one way we incentivize and ensure accountability that the Compass' objectives are embedded in everything we do as a business.

At Mars, we first linked the long-term incentive programs of our top ~350 Associates to GHG performance in 2013 with a target based on our Scope 1 and 2 emissions performance. In 2020 we updated

this incentives program to one designed around the four quadrants of the Mars Compass. The GHG targets in this program cover our full Scope 1, 2, and 3 emissions and, in 2022, we added a packaging circularity metric to the mix. Other factors in this scheme are a measurement of trust as well as economic value creation.

These compensation incentives directly communicate the importance of reducing our GHG emissions to senior leaders and creates motivation to continue to strengthen the business processes to deliver against our net zero goals.

## Our planning model

Mars has a multi-year forward-looking strategic planning process where we both plan for business results and identify the investments and activities required to deliver those results. For several years we have included GHGs and other sustainability metrics in our Integrated Value Creation Plan (IVCP). That inclusion is not just about a forecast of performance against these non-traditional metrics but planning the activity set and associated financial investments needed — reflecting a Compass-wide planning process. This creates the space to understand any opportunities and tradeoffs across different quadrants of the Compass.

This process also includes planning for growth. With the absolute GHG reductions required of net zero, it is not enough to plan only for the sorts of GHG reduction efforts we've shown in our roadmap. We must also plan for the GHG implications of business growth—the IVCP brings the implications of different growth choices on our GHG footprint into the process.

As a result of the Compass objectives and integration into our planning processes, by 2025 we will be investing more than \$1 billion annually across the pillars of our Sustainable in a Generation Plan, which include our efforts on climate.





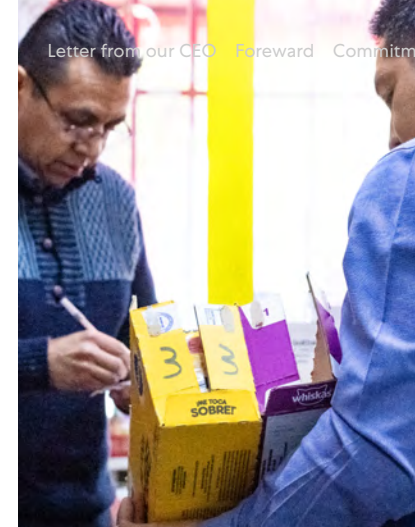
## Governance

In addition to planning, we have a multilayered governance system in place to ensure those plans turn into performance.

- The Mars Board of Directors who, along with the Mars Leadership Team (MLT), review the full suite of Compass Metrics annually;
- Progress against all our Compass goals is presented to the Mars Family annually;
- Various Board Committees have specific roles in relation to our GHG targets;
- Each of our business segments have Leadership Team-level steering committees monitoring the results, activity set and investments contributing to overall Mars results;
- The Sustainability Steering Group composed of sustainability heads from our segments and the corporate team is responsible for designing our broader climate program and targets and making recommendations to the MLT and Board on targets, enablers and critical policy topics; and
- Our Methodology Restatement Group with representation from Finance, Science and Sustainability governs the ongoing upgrades and improvements to our sustainability accounting.

## Mergers & Acquisitions

Besides managing the GHGs of businesses Mars operates today, we also recognize that climate is an important factor in our inorganic growth (i.e., merger and acquisition) strategy. Once we acquire a business, we acquire its GHG footprint all the way back to our baseline year of 2015 and are of course responsible for future emissions. In recognition of this, we now include an assessment of the GHG footprint of potential acquisitions into the due diligence process. This includes building into the financial model an estimate of the costs to manage the footprint of the acquired business in a way consistent with the Mars targets. Not only does this build the costs of climate into new acquisitions, it helps inform our strategy towards more carbon smart growth.



## Supplier Engagement

As more than 80% of our footprint comes from inputs—such as raw materials, packaging and logistics—we purchase for our business, the way we engage with suppliers is critical to our success to achieving net zero. We won't deliver on our goal without changes to combinations of what we buy, where we buy it, how we buy it and how our suppliers make it. We learned this lesson with our first renewable electricity contract in 2015—switching from being a spot market buyer of electricity to making a long-term commitment to a specific renewable energy asset was transformational to the economics. We were driven to the project for climate reasons, but most of the actual work to make it happen was core procurement, contract and risk management.



As with the other changes to our operating model, we are working to embed climate in our broader supplier management process, not simply bolt on a GHG footprint management request. Having our suppliers set targets is important but even more important is the process of building awareness and understanding of

the topic to set the stage for procurement discussions focused on their performance in delivering GHG reductions. We are leveraging all of our procurement tools—peer benchmarking, request for solution processes, continuous improvement targets, co-investment, longer term contracting and more.

In 2021, we launched a program called Supplier Leadership on Climate Transition (S-LoCT). Alongside some of our peers, we sponsored and invited suppliers to a “bootcamp” lead by Guidehouse who took suppliers on the journey of understanding climate, developing a GHG inventory and then setting a science based GHG target. Since then, the program has grown exponentially and now has nearly 25 member companies engaging their suppliers – today totaling nearly 650 supplier companies that have or are going through the program. For Mars, 49% of our Scope 3 is now covered by suppliers that have already set a SBTi target or are, or have already, participated in S-LoCT over the last three years.







The ability of a single company, such as Mars, to impact the climate crisis is limited unless others are successful in doing the same. As we approach our efforts to achieve net zero by 2050, we will make mistakes, learn, and adapt. But by thinking long-term—even generationally—we will stay committed to delivering performance with purpose and doing business today for the world we want tomorrow.

**We hope that others can learn from our Net Zero Roadmap and its fundamental elements, and invite others to provide feedback to make it even stronger.**



# MARS

Tomorrow starts today

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