



UNION PACIFIC

2021 CLIMATE ACTION PLAN



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COVER PHOTO: An EMD SD70AH Tier 4 locomotive leads a manifest train near St. John, Utah.



Statement from the Chairman



Union Pacific's purpose is to connect communities and businesses to each other and to the world. Fundamental to our purpose is supporting the health, safety, and viability of those communities and businesses. To that end Union Pacific is taking thoughtful and deliberate steps to reduce our environmental impact, and to help our partners improve theirs. These actions are broadly outlined in this Climate Action Plan.

The Climate Action Plan underpins our work to reduce our environmental impact, to achieve our science-based target, and ultimately to achieve net zero emissions. It is part of a comprehensive ESG initiative we call Building a Sustainable Future 2030 and fits neatly within our strategic framework of Serve/Grow/Win/Together.

Union Pacific operates an outdoor factory spanning roughly 32,000 miles across 23 states. There is no question climate change is impacting our operations. More frequent and severe weather events cause service disruptions that impact our ability to serve customers and that damage our infrastructure. Service interruptions in any part of our network – or the networks of our interchange partners – ripple through supply chains, impacting the nation's businesses and communities.

In February 2021, Union Pacific announced a science-based target to reduce absolute Scope 1 and 2 greenhouse gas (GHG) emissions by 26% by 2030 from a 2018 baseline. Our absolute goal requires us to more than overcome emissions from business growth and the Climate Action Plan is intended to help us achieve this target. Critical elements of the plan are already being implemented, and each year we will enhance the plan as technology and experience support more GHG reduction projects. In 2025 or sooner we will re-evaluate our target with an eye on achieving net zero emissions by 2050.

Clearly, rail transportation is a big part of the nation's climate solution. Moving freight by train instead of truck in the United States reduces GHG emissions by up to 75%. The environmental benefits of rail are well documented, and we stand ready to help our customers achieve their own carbon reduction targets.

For years Union Pacific has taken a serious-minded approach to environmental stewardship. We've included climate-related disclosures in our SEC filings since 2007 and published a sustainability report since 2009. We have also participated in the CDP, disclosing our carbon footprint, impact, and resilience since 2010.* As we focus our efforts to meet our science-based target, it is important that we align with and communicate our goals and actions to all Union Pacific stakeholders - employees, customers, shareholders, and the communities we serve.

At the heart of this stakeholder-engagement effort, we look to:

- Achieve internal alignment around our climate action,
- Increase transparent climate reporting using established ESG disclosure frameworks like GRI, CDP, TCFD and SASB which shows our progress and keeps our stakeholders informed, and
- Conduct a comprehensive climate scenario and resiliency analysis to better understand the risks to our operations, infrastructure and supply chains from specific climate scenarios.

Our Climate Action Plan is a pragmatic approach to reduce the impact our activities have on the world's climate. More efficient operations and reduced fuel consumption will only get us so far. To meet and exceed our current target, we must work to increase the use and availability of alternative, low-carbon fuels and develop emerging locomotive technologies.

While actions outlined in our Climate Action Plan are expected to have a positive impact on the environment, there's no simple solution to climate change. It will require our industry and the industries we serve to work collaboratively in developing effective, scalable climate solutions. Our generation and generations to come are depending on it.

A handwritten signature in black ink, appearing to read "Lance Fritz". The signature is stylized and fluid, with a large initial "L" and "F".

Lance Fritz
Chairman, President and CEO

*Union Pacific began reporting climate change data to the CDP in 2010, not 2012 as originally stated.

Introduction

The latest Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) indicates global warming caused by climate change is occurring faster, rather than abating. Human activity unequivocally has warmed the atmosphere, ocean and land. Widespread and rapid changes in the atmosphere, ocean, cryosphere and biosphere are occurring.

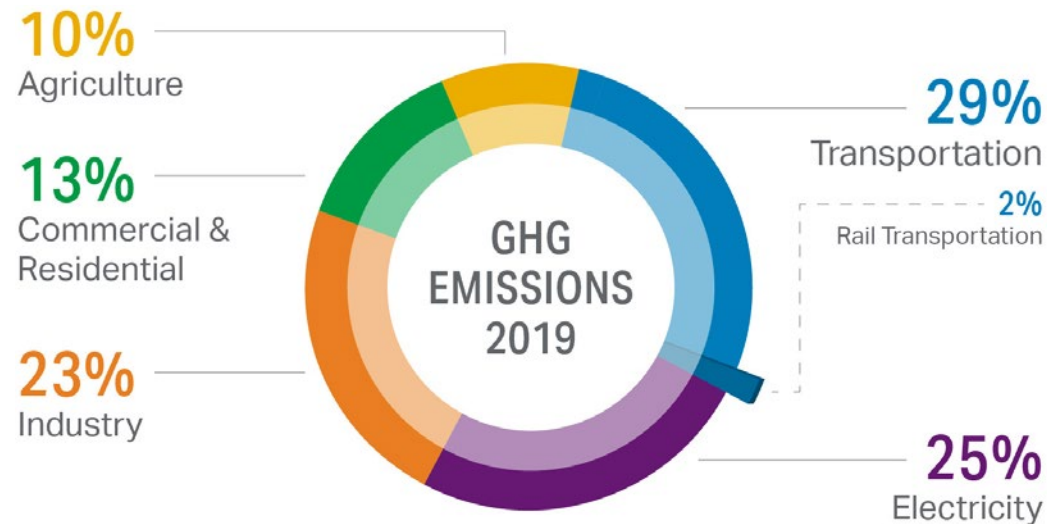
The IPCC AR6 report indicates that unless the world takes significant collective action now, it may be too late to contain long-term increases in average temperatures to 2 degrees.

The transportation sector is one of the largest contributors to anthropogenic U.S. greenhouse gas (GHG) emissions, according to the U.S. Environmental Protection Agency (EPA). In 2019, the transportation sector accounted for the largest portion of total U.S. GHG emissions – 29%. However, GHG emissions from rail transportation represented only 2% of that total.

Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered, according to the IPCC AR6 report. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO2 and other greenhouse gas emissions occur in the coming decades.

Building on rail's environmental advantage over other modes of transportation, Union Pacific is committed to reducing its carbon footprint as we recognize our role in reducing climate impacts when and where we can.

TOTAL U.S. GREENHOUSE GAS EMISSIONS BY ECONOMIC SECTOR IN 2019



We believe that rail transportation is a critical part of the solution to addressing and mitigating the impacts of climate change

- One train can carry the freight of hundreds of trucks, which reduces highway congestion and GHG emissions.
- Railroads are the most fuel-efficient way to move freight over land. Freight railroads are on average 3-4 times more fuel efficient than trucks.
- Moving freight by train instead of truck reduces GHG emissions by up to 75%.
- Railroads account for 40% of U.S. freight but only 2% of U.S. transportation-related greenhouse gas emissions.

Source: Association of American Railroads Sustainability Fact Sheet April 2021

Our Climate Goals

Locomotive operations represent our greatest source of GHG emissions. In 2018 (our baseline year), emissions from locomotives comprised 97.6% of our target scope GHG emissions and 85.4% of our total calculated emissions. Accordingly, most of our focus in reducing our carbon footprint is on our locomotive operations.

Union Pacific's climate strategy represents a pragmatic approach to its climate activities. While developing this strategy, we consider actions already taken to address climate change as well as what we can additionally do to reduce our environmental footprint. We have considered actions we are able to accomplish by ourselves, but more importantly, those actions we can and expect to take with others.

How are Union Pacific's emissions classified?

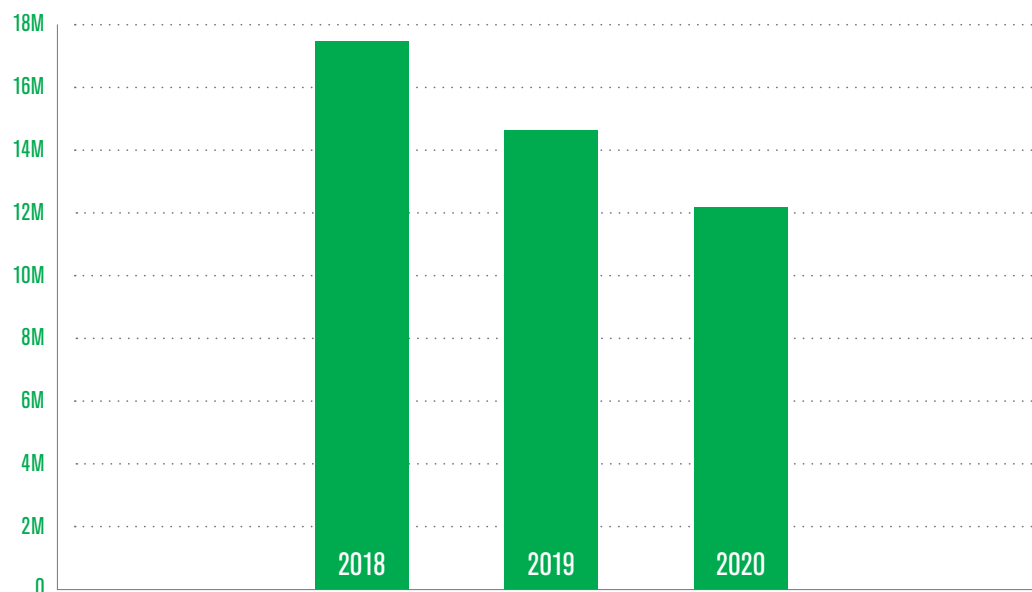
Scope 1 – Direct emissions from owned or controlled sources.

Scope 2 – Indirect emissions from the generation of purchased energy.

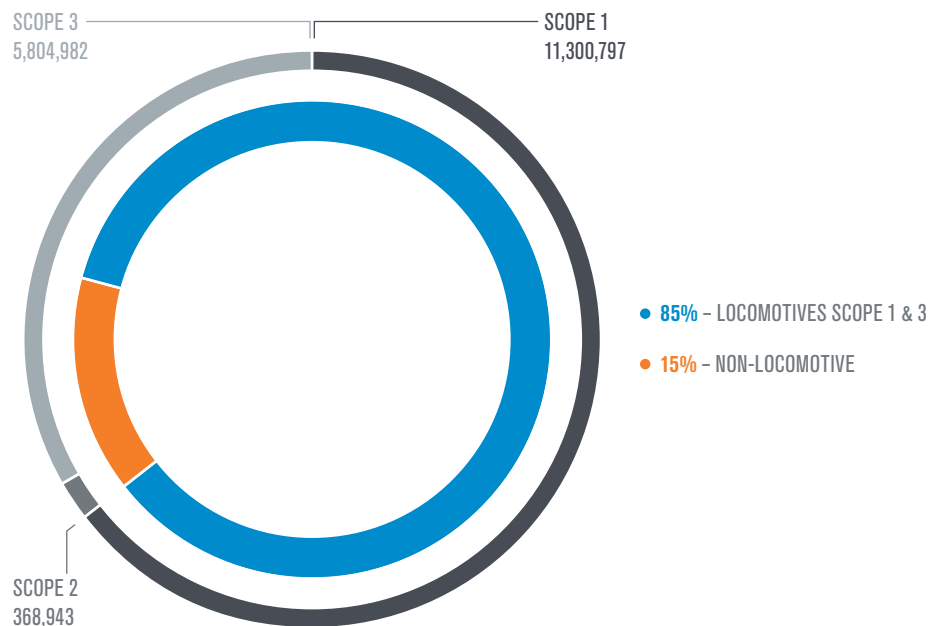
Scope 3 – Indirect emissions related to fuels, rail tie combustion, business travel and employee commuting, and various purchased products. Only locomotive-related Scope 3 emissions are included in our target scope emissions.

Union Pacific works with independent organizations to assure an accurate calculation of its annual GHG emissions and continually evaluates its greenhouse gas and energy data to produce a comprehensive assessment of its environmental footprint. In this report, 2018, 2019, and 2020 emissions data has been restated from prior publications to reflect an emissions factor change used to calculate Scope 3 emissions related to fuel and a recalculation of Scope 2 emissions related to purchased electricity.

2018-2020 TOTAL CALCULATED SCOPE 1, 2, AND 3 GHG EMISSIONS CO₂e (METRIC TONS)*



2018 TOTAL CALCULATED GHG EMISSIONS BY SCOPE*



*Restated data reflects an emissions factor change for Scope 3 fuel and recalculation for Scope 2 purchase electricity.

OUR SCIENCE-BASED TARGET

In February 2021, Union Pacific announced its target to reduce absolute Scope 1 and 2 GHG emissions and GHG emissions on a well-to-wheel basis from locomotive operations 26% by 2030 from a 2018 baseline. Well-to-wheel emissions include well-to-tank emissions, which are Scope 3 emissions generated upstream in the value chain during fuel production and transport, and tank-to-wheel emissions, which are Scope 1 emissions related to the consumption of the fuel. The target boundary includes biogenic emissions and removals from bioenergy feedstocks and has been validated by the Science Based Target initiative (SBTi).

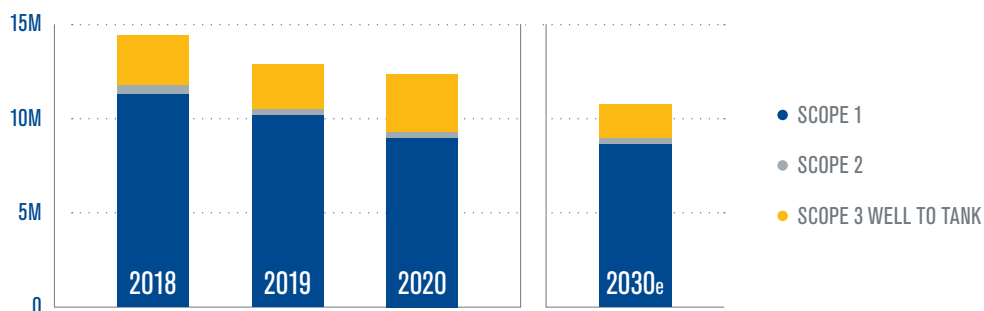
Our SBTi-approved target is in line with what climate scientists say is needed to meet the Paris Agreement goals – limiting global warming to well below 2° above pre-industrial levels. We are aware of the IPCC's recent finding regarding more urgent actions necessary to address climate change and will revalidate our target in 2025 or sooner for alignment with the most current science and on the path to net zero emissions by 2050.

Union Pacific Target: Reduce absolute Scope 1 and 2 GHG emissions and GHG emissions on a well-to-wheel basis from locomotive operations 26% by 2030 from a 2018 baseline.

We are approaching this target by continuing to make our operations more efficient through a better service plan and implementation of fuel-saving technology. In addition, we are pursuing efforts to decarbonize our operations through greater use of low-carbon fuels and the adoption of alternative-propulsion technology.

Union Pacific already has made significant progress toward its science-based target with its efficiency gains achieved through the implementation of Precision Scheduled Railroading (PSR) principles. In 2019, Union Pacific reduced its target scope GHG emissions by roughly 10% from its baseline in 2018 due to improvements in operating efficiency. In 2020, Union Pacific further reduced its target scope GHG emissions by another 10% from its base year. The reduction in 2020 was largely driven by decreased volumes as a result of the COVID-19 pandemic. As we now turn our focus toward growth, we anticipate we'll have to rely on more than operational efficiencies to achieve our goals.

GHG EMISSIONS RELATED TO SBTi COMMITMENT – CO₂e (METRIC TONS)*



TARGET SCOPE GHG EMISSIONS BY YEAR*

EXCLUDES NON-LOCOMOTIVE SCOPE 3 GHG EMISSIONS.

	SCOPE 1	SCOPE 2	SCOPE 3 WELL TO TANK	TOTAL
2018	11,300,797	368,943	3,624,596	15,294,336
2019	10,184,713	315,994	3,226,663	13,727,370
2020	8,979,288	301,504	2,844,836	12,125,628
2030e	8,630,864	320,269	1,807,221	10,758,354



*Restated data reflects an emissions factor change for Scope 3 fuel and recalculation for Scope 2 purchase electricity.

Strategy

At the heart of Union Pacific's climate action strategy are four core principles that drive our climate-focused activities, which align with our corporate strategy:

Serve, Grow, Win, Together.

SERVE

Improve operational efficiency and minimize fuel consumption

GROW

Offer sustainable supply chain solutions

WIN

Decarbonize our footprint and the environment

TOGETHER

Engage our stakeholders and align interests



SERVE

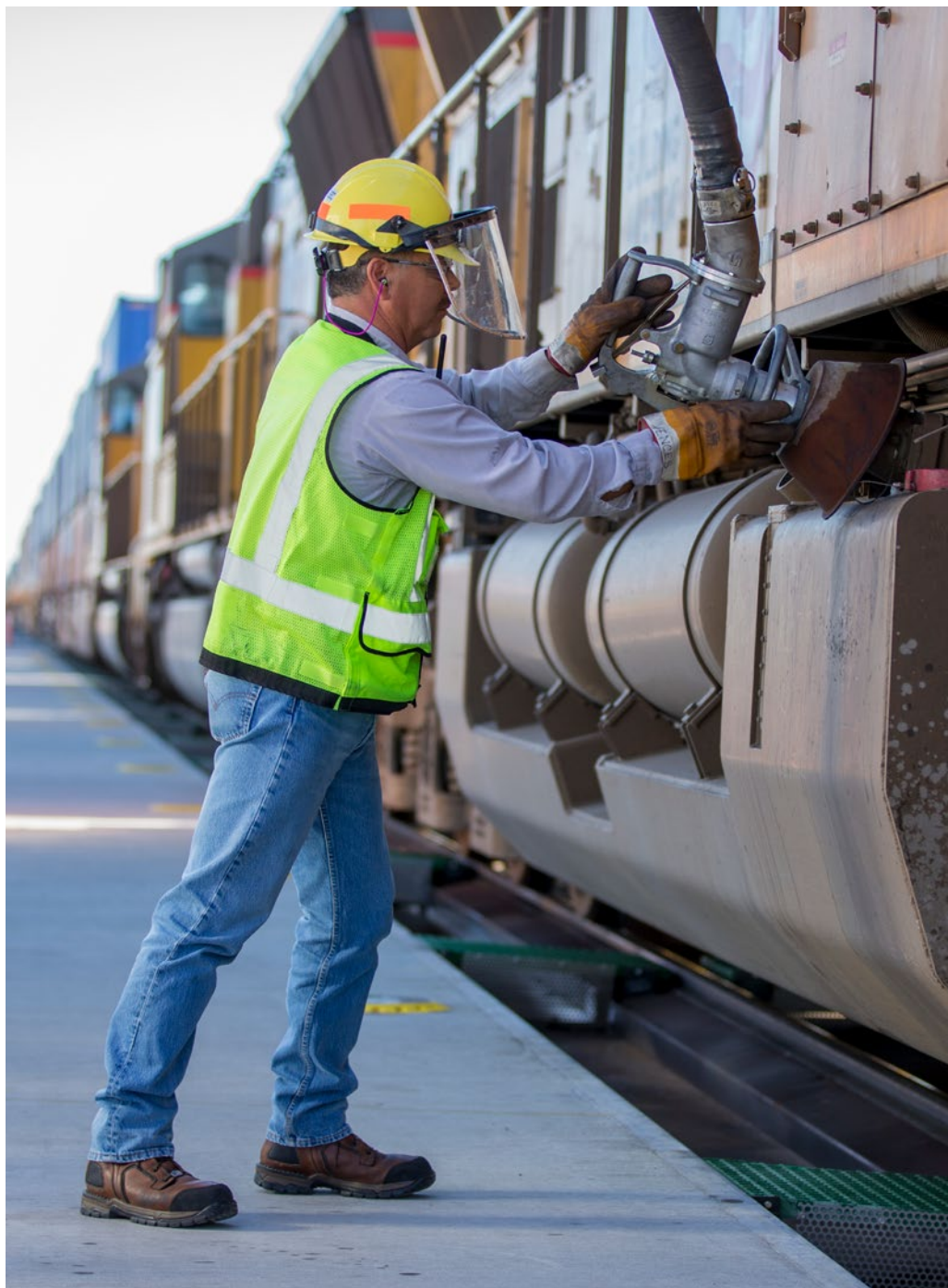
Improve operational efficiency and minimize fuel consumption by modernizing our locomotive fleet and implementing energy management technology.

Union Pacific's changes to its transportation plan have eliminated unnecessary work and improved train productivity. These efforts implemented over the past three years have resulted in freight cars moving across our network faster and more efficiently. As a result, we continue to reduce the size of our active locomotive fleet as we operate longer trains and anticipate further opportunities to grow train size. Longer train lengths improve locomotive productivity measured in gross ton miles per horse-power day, which results in fewer locomotives required to handle our freight.

Additionally, we are adopting technology that improves locomotive productivity with the potential of further reducing the size of our active locomotive fleet. Rail cleaning technology, which will be installed in over a fourth of our road fleet by the end of 2021, can improve the tractive power of a locomotive by up to 20%. Increased tractive power per locomotive increases locomotive productivity and reduces the number of locomotives we need to move freight.

The reduced locomotive requirement allows us to retire or store our least-efficient units, which results in a better average fuel efficiency across the fleet. Better fuel efficiency reduces fuel consumption, which also reduces GHG emissions.

Our locomotive fleet consists of high-horsepower locomotives that pull freight over long distances and low-horsepower switch locomotives that work primarily in train yards, sorting and delivering cars. Union Pacific has invested roughly \$3.4 billion to purchase more than 1,300 new locomotives since 2010, around 20% of our total fleet. At the same time, we have retired about 2,500 older, less fuel-efficient locomotives, which reduced our total fleet by approximately 35%. As technology inside modern locomotives improves, we are working to apply that technology to our existing locomotive fleet to improve reliability, which improves fuel efficiency and reduces emissions. Union Pacific is doing this through its fleet modernization program.



Jose Luis Vences refuels a locomotive at the Santa Teresa Intermodal Facility.

Nearly 175 high- and low-horsepower locomotives were overhauled in 2020, meaning they were completely rebuilt to meet more stringent emissions standards. Each modernization results in an approximate 53% reduction in emissions and an additional 5% reduction in fuel consumption per engine. These overhauls improved the reliability of our fleet, which resulted in a 14% increase in locomotive productivity compared to 2019, and reduced emissions through better fuel efficiency. We expect to complete around 100 modernizations in 2021 and plan for around 120 or so in 2022. We anticipate continuing this pace of modernizations in future years.

We invested in “mother-slug” sets, which replace two locomotives with one diesel locomotive connected to an accessory or slug. We use older SD38-2 locomotives, typically with higher emissions, for the conversion and remove the engine and alternator. The engineless slug increases traction motors available to the locomotive, boosting the pulling and braking power – key for yard operations. The new mother-slug sets achieve fuel and maintenance savings, plus offer environmental benefits because only one engine is used versus two. We began rolling out this equipment in 2017 and have more than 65 sets operating in yards systemwide, where emissions tend to be more concentrated.

Our Energy Management System (EMS) on locomotives helps us identify opportunities to save fuel. These systems work like cruise control, automatically controlling a locomotive's throttle and dynamic brake to reduce fuel usage and minimize GHG emissions. EMS has been implemented in approximately two thirds of our active road fleet with a target of full implementation by 2025. We estimate that EMS will reduce our absolute GHG emissions by 4% annually by 2025.

In addition to EMS, technology is helping us maximize our fuel economy. We've used automatic shutdowns for locomotives for more than a decade, rather than leaving them idle in yards. Additional management actions have allowed us to further reduce overall locomotive energy consumption by 1.5% from 2018 to 2020.

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Mechanic Frank Silvers works on a hybrid diesel Genset locomotive in West Colton, California.

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GROW

Offer sustainable supply chain solutions to capture emerging transportation opportunities, explore supply chain circularity, and provide an excellent service product that establishes rail as the environmentally responsible surface transportation solution.

Data indicates railroads are currently the most fuel-efficient way to move freight over land. As more of our customers begin to focus on reducing their own environmental footprints, we are positioned to provide lower carbon transportation solutions that can help them reach their targets.

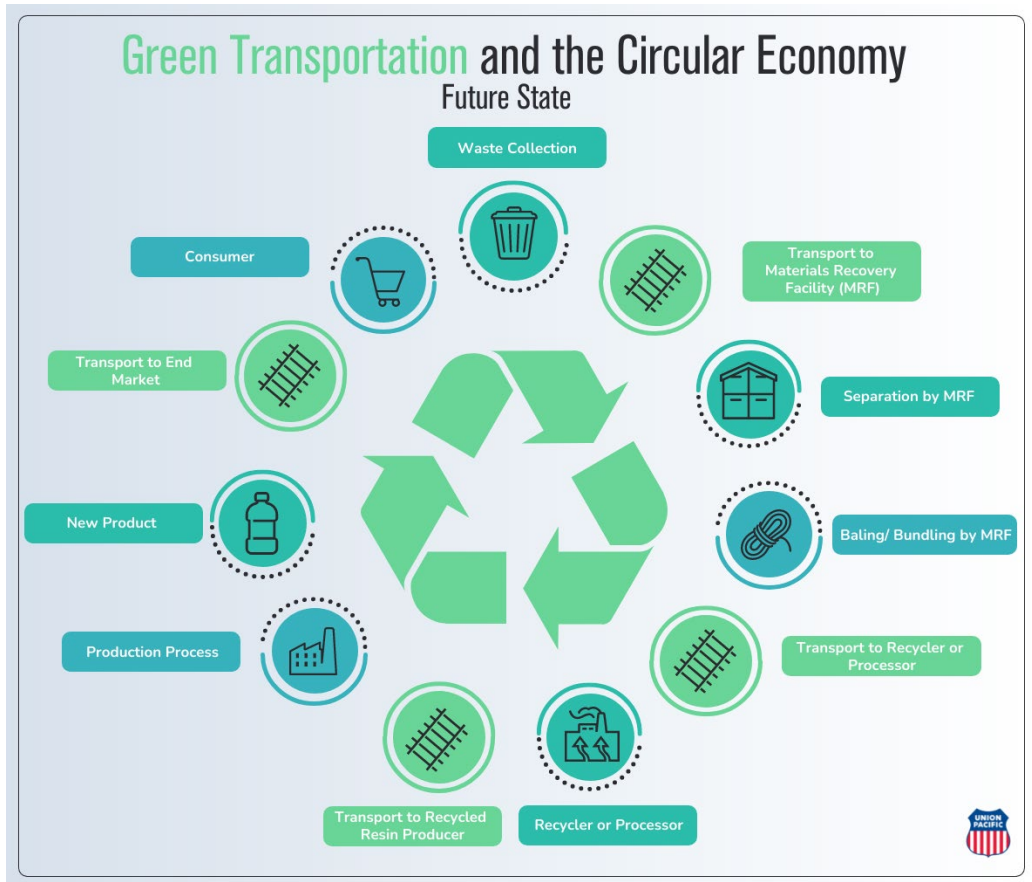
Converting traffic to rail from truck offers an immediate reduction in Scope 3 GHG emissions, which we believe will enable us to become a bigger part of our customers' value chains. We are engaging with our customers to understand their sustainability goals and identify opportunities to work together to help them reach their targets.

The screenshot shows a web form with the following fields: 'Origin City, State:' and 'Destination City, State:' (both dropdown menus), 'Commodity:' (a dropdown menu with 'Select a Commodity' text), and 'Number of Truckloads:' (a text input field). There are 'Clear' and 'Submit' buttons at the bottom of the form.

Union Pacific Railroad's Carbon Emission Estimator allows customers seeking to reduce carbon emissions to calculate their potential carbon

emissions savings from shipping on our railroad compared to moving goods by truck. We also provide customers with annual emissions savings estimates. In 2020, we estimate that our customers eliminated approximately 21.9 million metric tons of GHG emissions by choosing rail over truck transportation. That's the equivalent of removing 4.32 million cars from our highways or planting 335 million trees.

In addition to providing carbon savings to our customers, we also help support the transition to a low-carbon economy through the shipment of sustainable, recyclable goods. For example, over the past 10 years, we have moved more than 80,000 carloads of wind components. As the markets for low-carbon fuels and batteries develop, we expect to be poised to handle those shipments as well.



As the volume of recycled plastic resin increases, it will be important for plastics producers to use an environmentally responsible way to ship it to effectively meet their sustainability targets. Transporting by rail throughout the circular economy — from waste collection, to recycling, manufacturing, and consumer buying — offers the economies of scale needed to meet the growing demand.

Shipping these products by rail instead of truck presents a sizeable opportunity to reduce GHG emissions. Our carbon emission estimator reveals just how significant the difference can be. For example, if the 77 million metric tons of recycled plastics resin projected for 2030 were shipped by rail instead of truck from Dallas to Los Angeles, the carbon footprint would be reduced by 5.7 million metric tons of CO₂e.

WIN

Decarbonize our footprint and the environment by increasing our use of low-carbon fuels and experimenting with alternative propulsion methods and exploring nature-based solutions.

When it comes to finding ways to decarbonize our footprint, every idea is on the table. We are acting now on our most promising avenues to make progress toward our target.

Increasing the use of renewable diesel and biodiesel fuels currently represents the most promising avenue to help Union Pacific meet its science-based target. We are working to increase the percentage of low-carbon fuels consumed to 10% of our total diesel consumption by 2025 and push that number to 20% by 2030. Along with reductions resulting from more efficient operations and reduced fuel consumption, the achievement of these alternative fuel goals would enable us to meet our science-based target. This effort comes with significant challenges.

In August 2021, Union Pacific announced that Progress Rail approved the use of up to 20% biodiesel blend in the vast majority of Electro-Motive Diesel (EMD®) locomotives operated by the railroad. Previously, the locomotives were approved to operate using up to a 5% biodiesel blend. Progress Rail and Union Pacific are working together to test the higher biodiesel blend in the remaining EMD® fleet.

This is only the initial step. EMD® locomotives represent only approximately 40% of our existing locomotive fleet. To reach our goals related to the consumption of low-carbon fuels, we must reach a critical mass of our locomotive fleet compatible with higher blends of low-carbon fuels. Also, additional infrastructure investments may be required to facilitate the storage and use of these higher-blend fuels.

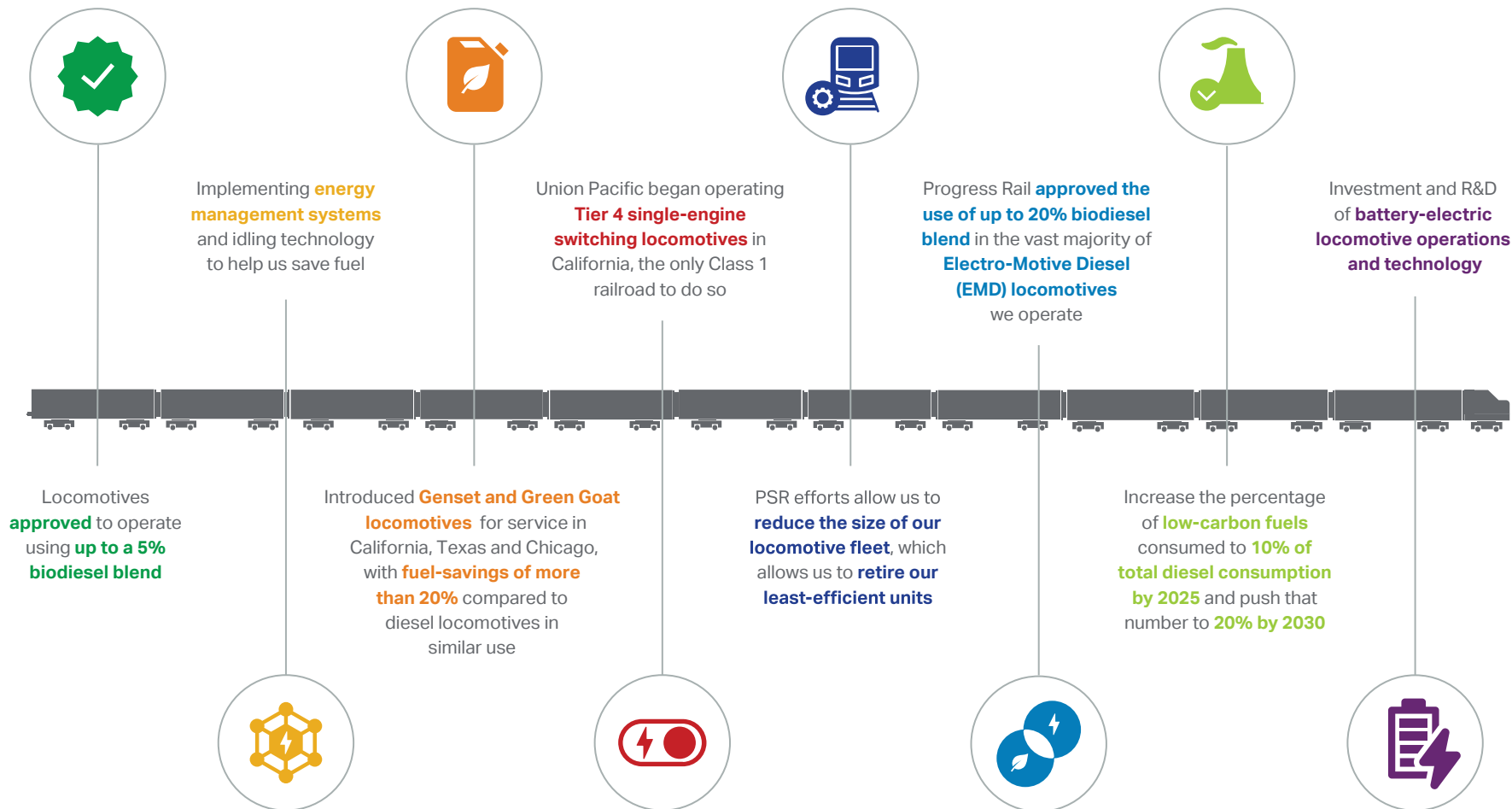
Our next steps include seeking similar approvals for the use of a 20% biodiesel blend from the other primary locomotive original equipment manufacturer (OEM) and securing adequate supplies of low-carbon fuels. We are having conversations with current and potential biodiesel supply chain parties to determine what infrastructure requirements will be needed to help us achieve our goals.

We are working to increase the percentage of low-carbon fuels consumed to 10% of our total diesel consumption by 2025 and push that number to 20% by 2030.



Along with reductions resulting from more efficient operations, the achievement of these alternative fuel goals would enable us to meet our science-based target.

CURRENT AND FUTURE ACTIONS TO DECARBONIZE FOOTPRINT AND INCREASE LOW CARBON FUELS



Finally, we realize that additional action is necessary to encourage the supply of biodiesel and renewable diesel in all 23 states in which we operate. Federal and state government policies should harness market principles to encourage the development and deployment of low-carbon fuels. We will work to develop policy strategies through the Decarbonization Working Group of the Association of American Railroads (AAR) to support this effort.

...we are leveraging our experience with low-emission switcher locomotive technology to develop specifications for a battery-electric locomotive that could be deployed in selected yard operations.

Union Pacific has a long history of working with low-emission switcher technology, dating back to 2002 with its first tests with low-emission hybrid locomotives known as the “Green Goats.” A few years later in 2006, Union Pacific began testing and operating genset switchers in its Southern California-LA Basin Yards. Genset units, short for “generator sets,” are built with multiple truck-engines designed to only produce the necessary horsepower for yard service.

We continue to apply our lessons learned about the unique challenges that we faced as early adopters of low-emission switcher technology.

- We currently have 21 Genset locomotives in service in Chicago, 14 of which are Tier 4 certified. They also generate fuel savings of as much as 37% compared to diesel locomotives in similar use.
- Union Pacific operates 10 Tier 4 single-engine switching locomotives, the highest tier and cleanest diesel-fueled technology available, for exclusive use in California. Because these units work within a concentrated area, improving switching locomotive emission levels can improve the local air quality by more than 90%. Union Pacific is the only Class I railroad operating Tier 4 switchers.

With respect to opportunities to reduce emissions beyond 2030, we are leveraging our experience with low-emission switcher locomotive technology to develop specifications for a battery-electric locomotive that could be deployed in selected yard operations.

A battery-electric low-horsepower locomotive prototype exists, and we are in preliminary discussions with our locomotive OEMs about this technology.

Switching operations in yards are an ideal starting ground to apply this technology compared to over-the-road operations due to the range of operation required. Localized operations should improve air quality around these yards, which would improve the environment for neighboring communities.

With respect to over-the-road operations, battery-electric locomotive technology currently is not sufficient to be practical for our network. We believe that investment by us and others in the rail industry is required to develop this technology. We are exploring collaborative efforts with others in our industry to advance this promising technology.



Everything's on the table

While the greatest opportunities for reducing fuel consumption and emissions comes from our locomotive operations, we are leveraging our employee knowledge and continuing to explore ways to develop new approaches that go beyond the locomotive. In 2021, we invested in a solar project in Fannin County, Texas, and we are evaluating opportunities to invest in renewable energy and other projects.

We are looking for opportunities to increase the electrification of our operations. For example, Union Pacific purchased its first electric vehicle in 2021. We are developing a strategy for the electrification of our vehicle fleet that contemplates usage and available charging infrastructure. Additionally, we are exploring the electrification of some of the tools that we use in our maintenance of way work.

We recently tested a new tie puller, spike puller and lagger in our maintenance of way operations. These tests have demonstrated the usefulness and efficacy of electrified tools. We have recommended the use of these tools on high production gangs and will continue to explore opportunities for greater battery tool usage systems in the future.

We are working to monitor and manage emissions associated with purchased energy, prioritizing project-based efforts that will allow us to reduce consumption. For example, we continue to work on reducing our carbon footprint by using LED light bulbs, as these options place less demand on the nation's energy grid and ultimately, the natural resources used to power it.

ENERGY CONSUMPTION*	2018	2019	2020
Diesel	1,075.1 gallons	969.2 gallons	854.4 gallons
Gasoline	10.7 gallons	10.0 gallons	9.1 gallons
Other fuel	15.2 gallons	16.1 gallons	21.3 gallons
Electricity	706.7 kilowatt hours	661.5 kilowatt hours	659.2 kilowatt hours
Natural gas	1,059 standard cubic feet	961 standard cubic feet	945 standard cubic feet

We replaced 160 light fixtures with LED lights in our Fort Worth locomotive shop to save annually approximately 425,000 kWh. Equally important, the better lighting requires less maintenance and provides a safer work environment for employees working around heavy equipment. We completed a similar project in our North Platte Supply Department, replacing 47 fixtures to save annually approximately 100,000 kWh.



Additionally, we are evaluating the circularity of our own supply chain to identify ways to reduce our waste. Union Pacific generated an estimated 2.1 million tons of waste in 2020 and diverted approximately 47% from landfills. Those 2020 results represented an increase in the tonnage amount of waste produced compared to 2019 and a significant decrease from the company's typical annual diversion rate of 70%. These differences were due primarily to a higher number of soil removal projects, making room for longer rail sidings and yard improvements meant to optimize our infrastructure in support of PSR.

We also are exploring nature-based solutions to prepare for our goals beyond 2030 and to address any residual emissions after our initial carbon reduction efforts. Nature-based solutions aren't just offsets. They involve protection, restoration and/or management of natural and semi-natural land and aquatic ecosystems. These include intact forests or working lands, such as croplands or timberlands. Ecosystem services and biodiversity are of critical importance, and we believe that these projects should be designed and implemented with engagement of local communities and Indigenous Peoples.

TOGETHER

Engage our stakeholders and align interests by using our influence to develop and advance rail- and climate-friendly policies and by engaging our workforce on environmental issues.

In addition to our participation in AAR activities described in the Approach to External Stakeholders section that follows, Union Pacific is a member of many national industry and business organizations, including the U.S. Chamber of Commerce, the National Association of Manufacturers, the Business Roundtable, and the GreenBiz Executive Network. We actively participate in the policy-making process with these organizations and advocate for rail- and climate-friendly policies.

We also are working to engage our workforce on sustainability initiatives. Union Pacific is the first railroad to organize an employee-led business resource group focused on environmental sustainability, Planet Tracks. The organization's mission is to improve business performance while fostering workforce engagement and personal awareness driven by initiatives that inspire sustainable focus and innovation throughout the organization. Its objectives include identifying and educating Union Pacific's workforce on environmental issues; championing environmental stewardship across the company and fostering employee engagement through training, networking and targeted activities.



Approach

Union Pacific's climate actions are already integrated into the company's governance structure. The Union Pacific Board of Directors provides oversight of our Environmental, Social and Governance (ESG) strategy. The Corporate Governance and Nominating Committee reviews current developments in ESG and recommends adoption of new – or modifications to existing – practices, policies and procedures.

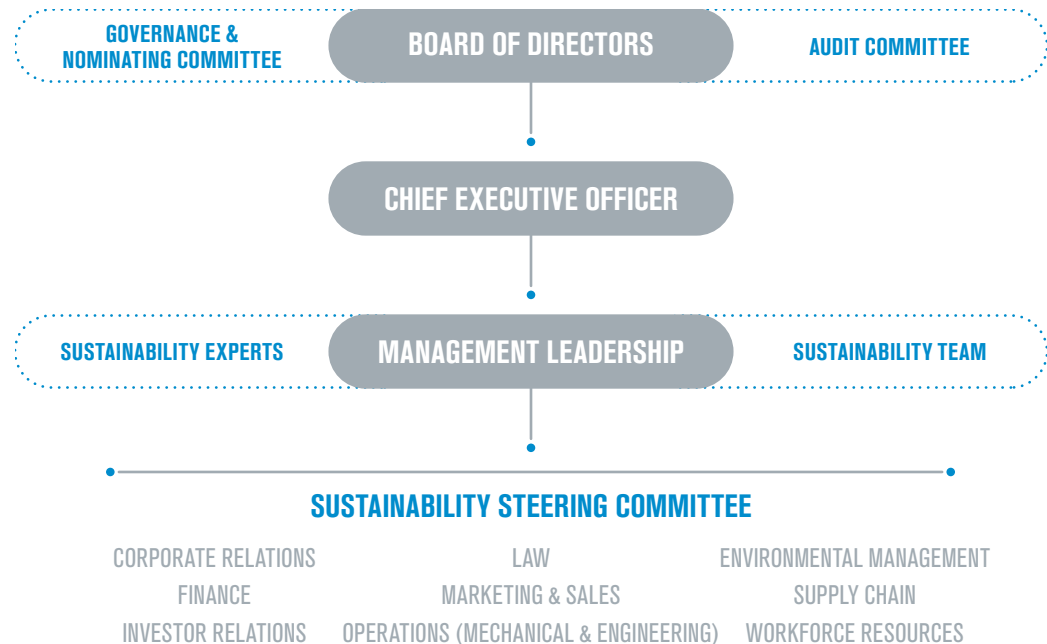
In addition to providing the Board with an annual report on environmental risk management (discussed below), we provide routine updates on our ESG activities, which include actions related to climate change.



In 2021, we formalized the Sustainability Team and added resources, including an individual dedicated to overseeing the day-to-day implementation of Union Pacific's ESG strategy and moving the company forward along its ESG disclosure journey. Looking forward, we are developing internal mechanisms to help increase the visibility of climate-related projects throughout the company. Finally, we are continuing to evolve ESG-related key performance indicators into our executive compensation scorecard.

To oversee and guide the appropriate management of ESG, we have established the following governance structures:

- Board of Directors** – Provides oversight of ESG strategy
- Chief Executive Officer** – Provides executive direction on ESG strategy
- Management Leadership** – Our Executive Vice President and Chief Human Resource Officer oversee ESG strategy and sustainability efforts
- Sustainability Team** – Oversees the day-to-day implementation of ESG strategy.
- Sustainability Steering Committee** – Senior leaders from Law, Finance, Marketing and Sales, Operations (Mechanical & Engineering), Supply Chain, Environmental Management, Corporate Relations, Investor Relations, and Workforce Resources meet quarterly to drive decision-making, accountability and ownership of specific ESG initiatives.



EXTERNAL STAKEHOLDERS

With respect to engaging external stakeholders, Union Pacific leads by example and actively participates in climate-related policy discussions to better align our positions.

- We review our associations and memberships regularly to ensure our involvement remains consistent with our public policy and business objectives and is in the best interests of Union Pacific. Although we do not expect to be aligned on every issue, we actively participate in the policy-making process and advocate for our positions through our leadership roles in several national trade associations.
- We are involved in the development of the policies described in the AAR position papers on climate change and sustainability. We participate in the AAR's Decarbonization Working Group.
- To improve the transparency of our disclosures, we are working to adopt both the SASB and TCFD reporting frameworks to guide our disclosures beginning in 2022. We have participated in the CDP since 2010* and received a climate change score of A- in 2020.

INTERNAL STAKEHOLDERS

To support alignment among internal stakeholders, we are developing and implementing internal mechanisms and processes to identify and evaluate climate-related projects. Among those efforts:

- Our Marketing & Sales team is developing processes to identify climate-related commercial opportunities and including our Sustainability Team in our customer conversations where appropriate.
- Our Finance team has established mechanisms to capture climate-related capital, and is expanding those efforts to track spending more broadly. In addition, our capital project review process challenges investments where a clean energy alternative is readily available.
- Our employees are leading an effort to increase workforce engagement on environmental issues through our new sustainability business resource group, Planet Tracks.
- We will continue to evolve ESG-related key performance indicators in our executive compensation scorecard.



Gaining better visibility into our climate-related opportunities and projects will allow us to better understand the impact of climate change on our business. Aligning the interests of our employees to our broader climate-related goals will ensure everyone understands and executes our climate strategy.

*Union Pacific began reporting climate change data to the CDP in 2010, not 2012 as originally stated.

RISK MANAGEMENT

Our enterprise risk management process is designed to identify and consider climate-related risks.

Union Pacific's enterprise risk management process is dynamic and regularly monitored so the company can timely identify and address any potential risks that arise in the ever-changing economic, political, legal and technology threat environment in which it operates, as well as address business continuity and long-term operational resiliency.

The Board of Directors is responsible for overseeing the assessment and management of the critical enterprise risks affecting the company. The Board delegates to the Audit Committee primary responsibility for oversight of managing risks related to operations of the company.

Management identifies and prioritizes enterprise risks, including climate-related risks, and regularly presents them to the Board for its review and consideration. The senior executives responsible for implementation of appropriate mitigation strategies for the company's top enterprise risks, along with the chief compliance officer, provide reports directly to the Board during the year.

The Audit Committee also receives reports throughout the year from the chief compliance officer and the senior executives responsible for financial reporting, cybersecurity, and environmental matters. In addition, the Audit Committee oversees the company's internal audit of enterprise risks selected for review and evaluation based upon the company's annual risk assessment model with the purpose of evaluating the effectiveness of mitigating controls and activities of company personnel. The company's internal auditors present to the Audit Committee findings regarding the mitigating controls and processes for the enterprise risks selected for review. The Audit Committee, in turn, reports those findings to the entire Board.

CLIMATE-RELATED RISKS

With respect to climate-related risks, we are most likely to be affected in the short term by acute physical risks. As a railroad with a vast network, we are exposed to severe weather conditions and other natural phenomena, including earthquakes, hurricanes, forest fires, floods, mudslides or landslides, extreme temperatures, avalanches, and significant precipitation. Track outages and other interruptions caused by these conditions can adversely affect our rail network, potentially negatively affecting revenue, costs, and liabilities, despite efforts we undertake to plan for these events. Chronic physical risks associated with shifting climate patterns and increased temperatures present longer-term risks.

Additionally, we are subject to transition risks involving policy and legal risks and market risks. Regulatory policy restricting or taxing emissions could significantly increase the cost of our operations and that of certain customers. And we are managing shifts in demand for fossil fuels and other commodities that are being affected by the energy transition that is underway. The medium- and long-term effects of transition risks are less certain, but we are working to better understand these impacts through our planning processes. Union Pacific defines the short-term



horizon as 0-3 years, the medium-term horizon as 3-10 years, and the long-term horizon as 10-30 years.

To facilitate our understanding of climate-related risks and opportunities over the longer term, we will conduct a climate scenario analysis to better understand the range of impacts of climate change on our business. This climate scenario analysis will further inform our internal processes to help us integrate climate-related risks into our enterprise risk management process. It will also contribute to the foundation for future climate disclosures.

NEED FOR COLLABORATION

Challenges and risks associated with climate change extend beyond our network. Interconnectedness of North American rail networks and the interoperability of equipment among railroads presents a challenge and an opportunity. Disruptions caused by severe weather events on one carrier's network affect its interchange partners.

Railroading is a capital-intensive industry with long-lived assets, so we must be thoughtful about how we explore potential solutions. There is no simple solution to climate change, so we believe the rail industry should work collaboratively throughout its value chain to develop the best solutions for the industry.

Within the rail industry, Union Pacific participates in AAR's Decarbonization Working Group and Locomotive Committee to identify emerging technology and advance policy to support the decarbonization of the rail industry. We are exploring ways to partner with the other rail carriers and our equipment and energy suppliers to develop technology and fuel availability that can move the industry forward in this effort.

Union Pacific also engages in discussions with government agencies and non-governmental organizations to help identify reasonable strategies designed to achieve the long-term goals of the climate action plan.



Bridge inspectors examine a railroad bridge adjacent to the Benicia-Martinez Bridge in California.

Conclusion

Our climate is changing and there is a serious need, especially for businesses and government, to take action to prevent further drastic negative impacts to our environment. Rail transportation, while more fuel-efficient than trucks, still has a notable greenhouse gas emissions footprint. We intend to be a part of the climate solution by proactively seizing opportunities and investing in initiatives to meet, and exceed, our target.

Our absolute science-based target requires us to look for ways to decouple our emissions from our operating business growth model. To reach our 2030 target, we intend to:

- Continue improving the reliability of our locomotive fleet to improve productivity;
- Implement and increase utilization of technology such as energy management systems and idling technology to reduce fuel consumption; and
- Work diligently with our supply chain partners toward achieving our low-carbon fuel objectives.

At the same time, we are also looking to the longer-term horizon and are preparing ourselves for targets beyond 2030. We are progressing our plan to explore battery electric locomotive technology to determine the fit and feasibility of operations at scale. Lastly, we will continue to encourage collaboration both inside and outside of the industry to develop innovative solutions for the railroad industry.

To further align among internal and external shareholders, we are supplementing our strong governance mechanisms to maintain visibility into our climate efforts. We look forward to sharing our progress and our learning during our journey through our website, our future ESG disclosures, and our CDP submission. Whatever challenges we face, Union Pacific is committed to Building a Sustainable Future.

APPENDIX: 2018-2020 GHG EMISSIONS DATA*

ENVIRONMENTAL DATA	UNIT	2018	2019	2020
Direct (Scope 1) GHG Emissions	METRIC TONS CO ₂ Eq	11,300,797	10,184,713	8,979,288
Energy Indirect (Scope 2) GHG Emissions	METRIC TONS CO ₂ Eq	368,943	315,994	301,504
Other Indirect (Scope 3) GHG Emissions (Locomotive Fuel Well-to-Tank)	METRIC TONS CO ₂ Eq	3,624,596	3,226,663	2,844,836
Other Indirect (Scope 3) GHG Emissions (Non-Locomotive Fuels, Rail Ties, Combustion, Business Travel and Employee Commuting, and Various Purchased Products)	METRIC TONS CO ₂ Eq	2,180,386	862,951	740,341
Total Calculated Scope 1, 2, & 3 Emissions	METRIC TONS CO ₂ Eq	17,474,722	14,590,321	12,865,969
Absolute GHG Emissions for SBT	METRIC TONS CO ₂ Eq	15,294,336	13,727,370	12,125,628
GHG Emissions Intensity (Scope 1 & Scope 2)	METRIC TONS CO ₂ Eq/MGTM	12.6	12.4	12.0
GHG Emissions Intensity (Target Scope)	METRIC TONS CO ₂ Eq/MGTM	16.5	16.2	15.7
Emissions of Ozone-Depleting Substances (ODS)	METRIC TONS CO ₂ Eq	55,758	39,947	32,699
Locomotive Fuel Consumed, Percentage Renewable	%	1.2	1.4	2.2
Energy Usage	MEGAWATT HOURS	45.3 MILLION	40.9 MILLION	36.4 MILLION
Total Waste Generated	TONS	2.09 MILLION	1.43 MILLION	2.11 MILLION

*Restated data reflects an emissions factor change for Scope 3 fuel and recalculation for Scope 2 purchase electricity.

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CAUTIONARY INFORMATION

Our 2021 Climate Action Plan provides additional explanatory information regarding Union Pacific that may not be available, included or directly derived from information in the company's Annual Report. Information included in this document, and any issues identified as important for purposes of this document, may not be considered material for SEC reporting purposes. Materiality and/or the term "material" in the context of this document is distinct from and should not be confused with, such terms as defined for SEC reporting purposes.

This report includes statements and information regarding future expectations, outcomes or results of the company that are not historical facts. These statements and information are forward looking as defined by federal securities laws. Forward-looking statements and information can be identified by use of forward-looking terminology (and derivations thereof), such as "believes," "expects," "may," "should," "will," "would," "intends," "plans," "estimates," "anticipates," "strives," "seeks," "aspires," "endeavors," "target," "projects" and other words or phrases of similar intent.

Forward-looking statements and information generally include the following: the company's expectations, goals, forecasts, targets, and aspirations with respect to sustainability, climate change, environmental, and corporate responsibility matters, including related risks and opportunities; demand for the company's rail service; enhancing profitability; volume and revenue growth; efficiency improvements and increasing returns; the effectiveness or growth of new and newer services; management of network volumes; increasing shareholder value; total amount of capital investments; completion and effectiveness of capacity expansion and

other capital investments, and other investments in infrastructure improvements, including as related to the Climate Action Plan and related efforts; returns on capital investments; improvements regarding the sustainability, emissions, and safety of our operations and equipment; improving efficiencies in fuel consumption; preserving the environment and communities where the company operates; and effectiveness of plans, programs and initiatives to reduce costs, reduce or improve environmental impacts and other efficiency improvements. Forward-looking statements and information should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of the times that, or by which, such performance, targets, goals, or results will be achieved. Forward-looking statements and information are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the statements. Forward-looking statements and information reflect the good faith consideration by management of currently available information and may be based on underlying assumptions believed to be reasonable under the circumstances. However, such information and assumptions (and, therefore, such forward-looking statements and information) are or may be subject to variables or unknown or unforeseeable events or circumstances over which management has little or no influence or control and may be derived from internal controls and processes that continue to evolve and standards are measuring progress that are still developing.

Factors that could cause results or outcomes to differ, including the risk factors in Item 1A of the company's Annual Form 10-K, filed Feb. 5, 2021, also could affect our future results and could cause those results or other outcomes to differ materially from those expressed or implied in the forward-looking statements and information. This report should be read in consideration of these risk factors. To the extent circumstances require or the company deems it otherwise necessary, the company will update or amend these risk factors in subsequent Annual Reports, periodic reports on Form 10-Q or current reports on Form 8-K.

Forward-looking statements speak only as of the date the statement was made. We assume no obligation to update forward-looking information to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, regardless of any past practice of doing so. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect thereto or with respect to other forward-looking statements.

Website references and/or hyperlinks have been provided for convenience only, and the contents therein are not incorporated into, nor do they constitute a part of, this document.