2018 Highlights

PROGRESS TOWARD OUR VISION

GM continues to work toward its vision of zero crashes, zero emissions and zero congestion. We’re doing so through the integration of sustainability into every part of our business — all under the purview of our Board of Directors’ Governance and Corporate Responsibility Committee, whose members regularly review progress with the Board.

3.5X
Our AVs drove 3.5 times more miles in 2018 than in 2017. That underscores the tremendous progress we’re making toward the commercial introduction of AVs — a key part of our zero-crashes vision. We also secured commitments for more than $5 billion of external investment in our AV subsidiary, Cruise, demonstrating the level of confidence in our vision.

20%
In 2018, 20 percent of our global electricity needs were met by renewable energy — well on the way to our commitment of 100 percent by 2050.

#1
GM ranks first on Equileap’s 2018 Gender Equality in the Workplace. Among the reasons: We are one of just two global businesses that has pay equality in top, middle and bottom bands, as well as no overall gender pay gap across the company.

1st
GM is the first and currently only automaker to be led by a female CEO and the only member of the Fortune 20 to have a female CEO and CFO.

1 in 3
GM employees participate in a GM-sponsored Employee Resource Group, which nurtures a culture of inclusion throughout the company.

2
In 2018, we introduced two new EVs in China, the world’s largest new energy vehicle market. In the U.S., Cadillac will be our lead brand for electrification technologies, and 75 percent of our engineering force will be focused on clean energy technologies.

1.2 million
In 2018, more than 1.2 million gallons of gas were saved through Maven Gig.

443%
Research by the Insurance Institute for Highway Safety has found that GM vehicles with autobrake and forward collision warning were involved in 43 percent fewer rear-end crashes compared to the same vehicles without those features.

1st
We are the first automotive company to commit to the future of sourcing sustainable natural rubber for tires in order to mitigate deforestation and its effects on climate change.

20%
We’ve reduced our manufacturing carbon intensity since 2010 — three years ahead of goal.

GM ranks 14th and highest in our industry on the JUST 100, a ranking of companies whose business behaviors align with priorities of the American public in environment, social and ethical factors.

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We’re accelerating progress toward an era of safer, better and more sustainable personal mobility by transforming how General Motors approaches every aspect of its business.
Leadership Message

To Our Stakeholders,

Two years ago, amid a sweeping business and cultural transformation at General Motors, we revealed our vision to create a world with zero crashes, zero emissions and zero congestion. Since then, that vision drives our business decisions because it is the right thing to do for our customers, our employees and future generations.

We are moving quickly to reshape the future of personal mobility to save lives, create a cleaner environment and end the traffic jams that waste our time and money. As you will see in this report, our journey is already well underway.

In 2018, we accelerated our transformation to position the company for long-term success in a rapidly changing world. As we continue to strengthen our core business, we are placing smart bets on technologies that will drive a future that is electric, autonomous, connected and shared.
Committed to an All-Electric Future
Climate change is real, and we take the challenges it presents seriously. We also recognize the transportation sector needs to be part of the solution, which is why we believe in an all-electric future.

To this end, over the next two years we will double our resources allocated to electric and autonomous vehicle programs, and we will prioritize future investments in next-generation battery-electric vehicles. Here’s a look at our recent progress in electric vehicles (EVs):

• In June, we reconfirmed we are preparing a full lineup of electric vehicles, including an electric truck that is currently in development.
• In March, we announced a $300 million investment in our Orion Township, Michigan, assembly plant to produce a new Chevrolet electric vehicle, creating 400 new jobs. The vehicle will be built alongside the award-winning Chevrolet Bolt EV.
• In January, we announced Cadillac will be General Motors’ lead EV brand when we launch our next-generation, battery-electric vehicle architecture. This global architecture will be flexible and versatile, allowing us to build everything in our portfolio from just three drive units. This flexibility will allow us to deliver profitable EVs that also meet our customers’ needs for affordability and range.
• In 2018, we introduced two new all-electric vehicles in China, based on what we have learned from developing the Chevrolet Bolt EV: the Buick Velite 6 EV and the Baojun E200. China is the world’s largest EV market, and a major driver of EV adoption.

To support our growing EV portfolio, last fall we invested $28 million in our battery lab at our Global Technical Center in Warren, Michigan, where we conduct nearly all battery testing to reduce development time and cost. The investment funded new test chambers and advanced equipment that will help us accelerate our next-generation battery architecture. We continue to build lithium-ion batteries at our Brownstown Battery Assembly Plant.

Where it makes sense, we work with like-minded partners to bring EVs to market more quickly. In 2018, we announced a partnership with Honda to collaborate on advanced chemistry battery components, with Honda ultimately sourcing battery modules from General Motors. Our combined scale and manufacturing efficiencies will help each of us accelerate our EV programs.

Advocating for an EV Ecosystem
While the transition to an all-electric future will not happen overnight, we are tackling the numerous hurdles to adoption. We understand that consumers want zero-compromise EVs that are highly desirable and attainable, with long range and a robust charging network.

To address concerns about range, we recently announced we will work with Bechtel to build a public EV fast-charging infrastructure in the U.S. We will leverage our scale, flexibility and proprietary data to provide convenient charging options to EV customers as awareness and adoption continue to grow.

Earlier this year we announced our intentions to collaborate with EVgo, ChargePoint and GreenLots — three of the nation’s leading EV charging networks — to give our EV customers access to more than 31,000 charging ports, data about charge station availability and compatibility, and other real-time, data-driven features through the myChevrolet app.
LEADERSHIP MESSAGE

On the policy front, we endorse the recently introduced Driving America Forward Act, a bipartisan measure that would encourage greater sales of electric vehicles by extending the federal EV tax credit.

Another step toward an all-electric future is our proposed National Zero Emission Vehicle (NZEV) program. It is a comprehensive approach to help move the U.S. faster toward zero emissions, while encouraging American innovation and preserving the country’s industrial strength.

Under the plan we have submitted, manufacturers would need to meet steadily increasing targets for electrifying a portion of their light-duty vehicle fleets. In addition, we support further dialogue on continued EV research, EV infrastructure investment and federal incentives. The program could put more than 7 million long-range EVs on the road while reducing CO2 emissions by 375 million tons over current levels between 2021 and 2030.

**Reimagining Personal Mobility**

We believe the future is electric, and we also believe it is autonomous, connected and shared. General Motors is making rapid advancements today to disrupt the traditional one vehicle/one driver model of mobility.

Successful, widespread and safe deployment of autonomous vehicles (AVs) will require the right integration of technology, talent and manufacturing expertise. When it comes to developing and deploying self-driving vehicles, General Motors and its Cruise AV subsidiary are in a unique leadership position, with everything from design, engineering, validation and testing all under one roof.

We believe this seamless integration is the safest way to develop autonomous vehicles, and with help from investments from the SoftBank Vision Fund ($2.25 billion), Honda ($2.75 billion), and most recently, funds advised by T. Rowe Price and existing Cruise partners, ($1.15 billion), we will strengthen our commercialization plans.

These investments and strategic partnerships validate our approach to AV development and, importantly, give us the resources to tackle what we believe is the greatest engineering challenge of our generation.

At Cruise, we plan to add 1,000 employees this year — nearly doubling our workforce — as we develop and prepare to safely commercialize AVs. Cruise already operates an employee ridesharing network in San Francisco using Cruise AVs. Additionally, we are working with Cruise and Honda to develop a new, purpose-built AV for global deployment that can serve a wide variety of use cases.

Technologies such as Cadillac’s hands-free driver assistance system, Super Cruise, are stepping stones to fully autonomous vehicles. This year we are expanding the functionality of Super Cruise and adding another 70,000 miles of compatible divided highways in the U.S. and Canada, making this
~20% of GM’s operational electricity needs are powered by renewable energy

technology available on more than 200,000 miles of highways.

Self-driving vehicles are one way to disrupt the traditional ownership model; sharing is another. Through Maven, our on-demand shared mobility platform, we have learned a great deal about how urban customers use shared mobility. Our newest offering, peer-to-peer car sharing, allows owners of General Motors vehicles to earn money by listing their personal vehicle for Maven members to use.

Reducing Our Environmental Footprint
Beyond transitioning to electric, autonomous and shared vehicles, we are working across our global operations to minimize our environmental impact on the way to a zero-emissions future. Today, renewable energy powers about 20 percent of our operational electricity needs as we progress toward our 100 percent renewable energy commitment by 2050.

Thanks to a series of purchase agreements for wind power, our full-size SUV assembly plant in Arlington, Texas, runs entirely on wind energy, earning a spot on the U.S. Environmental Protection Agency’s National Top 100 List of the largest green power users.

We also have entered into a wind power agreement with DTE Energy in Michigan to purchase 300,000 megawatt hours of electricity — enough to operate our Technical Center in Warren and our global headquarters in Detroit.

In addition to our renewable energy goal, we are committed to using less energy overall and reducing our carbon emissions globally. Since 2010, we have reduced our carbon intensity by over 20 percent, avoiding 1.5 million tons of carbon emissions — roughly the annual electric use of 260,000 homes.

Making our vehicles lighter and more efficient is another step toward zero emissions. As customers continue to choose crossovers, trucks and SUVs over sedans, our teams work to ensure these vehicles are as efficient as possible through techniques like 3-D printing, parts consolidation, aerodynamics and the use of lighter materials.

We have removed an average of 350 pounds from each architecture on new-vehicle launches, compared to the previous model. This has reduced carbon emissions by about 312,000 metric tons per year, and demonstrates that strides toward zero emissions can also come from our traditional product lineup.

Investing in Talent for Today and Tomorrow
To deliver the technology, transformation and vision we’ve laid out, we must build a world-class, inclusive culture, with diverse perspectives and innovative ideas from people who feel they can bring their true selves to work.

A truly inclusive culture gives our business a competitive edge, and gives our customers winning vehicles and services.

As of June 2019, we have a majority female Board of Directors. This sends a message to current and prospective employees that our commitment to diversity begins at the top.

GM is proud to be ranked No. 1 for gender equality by Equileap, based on our commitment to pay equity at all levels of the company. Additionally, this year we were named to Bloomberg’s Gender-Equality Index for our commitment to advancing women’s equality.

Cultural transformation is every leader’s job. We are accountable for developing a pipeline of diverse talent through career development, and from insights from our internal Executive Networks and Employee Resource Groups.

Looking to the future, our urgent priority is to create a strong pipeline of talent proficient in STEM disciplines — the future designers, IT professionals, engineers
We are experiencing more change in the auto industry today than in the past 50 years.

and leaders of our company. Third-party studies reveal that by 2025, there will be up to 2 million unfilled STEM jobs in the U.S. because of a lack of qualified candidates.

Given the right opportunities, women, minorities and other under-represented groups can help make up this shortfall. We are engaging students and sparking interest in STEM careers with a number of programs and partnerships at the intersection of STEM and the future of mobility, including:

• AI4ALL, a nonprofit dedicated to increasing diversity and inclusion in AI development;
• Girls Who Code, which gives girls from underserved communities access to computer science education and mentorship; and
• the International Society for Technology in Education, a national nonprofit focusing on education technology, setting standards for educational tech products and training teachers in STEM education.

We are also investing in our manufacturing base to support production of the crossovers, SUVs and trucks that today’s customers prefer. In the past decade alone, we have invested about $23 billion in our U.S. facilities, more than any other automaker during that timeframe, and nearly a quarter of all U.S. automotive manufacturing-related investments.

We will continue to invest in our core products because they will be an important part of our business for years to come.

**Powered by Our Purpose**

For years, we have said that the auto industry is experiencing more change today than in the past 50 years. That pace of change is only accelerating. With the right team, technology, resources and scale to achieve our vision, I believe the only thing that can stop us is not acting quickly enough.

Disruption creates uncertainty, but it also creates vast possibilities. I’m excited about the changes happening within General Motors and the opportunity to create mobility solutions that will enhance shareholder value and lead to a better world.

Mary T. Barra
Chairman and Chief Executive Officer
The theme of this year’s report is “Transformation in Progress.” How does that support GM’s vision of zero crashes, zero emissions, zero congestion?

Every decision we make and every action we take is about realizing that vision. And that vision is so much bigger than GM’s business. It’s really about transforming personal mobility in the future — finding ways to deliver all the benefits of personal mobility without any of the negative impacts. To get there, however, we have to transform as a business, and that’s what is happening today throughout the company on a global basis. And it goes way beyond moving vehicles away from the internal combustion engine to electrification.

So you’re not just talking simply about the transformation of GM’s product portfolio?

No, much broader transformation is required to get there. We’re transforming our workforce, for example, by moving three-quarters of our product development and engineering talent from traditional to advanced technologies. We’re transforming our approach to supply chain by taking a more holistic, multitiered approach, going well beyond Tier 1 to understand impacts. We’re transforming our view of strategic partnerships, working with a competitor — Honda in this case — to collaborate on autonomous technology. We’re championing public-private partnerships to accelerate charging infrastructure. And the list goes on. It’s a very different outlook than we had even as recently as five years ago, and I think it speaks to the incredible pace of change happening in the automotive industry.

GM has put a lot of emphasis in recent years on reshaping its culture. How does this effort factor into the transformation journey?

It’s foundational, and it’s been a priority for our senior leadership ever since the ignition switch recall in 2014. We realized then that the underlying culture had to change — and to do that, we had to change our behaviors. The culture had to become more accountable and embrace a common set of values and ways of behaving at work. Now, we’re much more open about showing recognition when we see peers living out our behaviors — as well as speaking up when something’s not right. Culture is also a strategic priority because it helps us attract and retain the talent required to move toward our vision.

What are some of the attributes of this new culture?

There has been a tremendous emphasis on safety — both of our products and our workplace. That was important coming out of the recall, and it’s critical to our future. After all, the first step to realizing a vision of zero crashes is to create a culture of safety. As you’ll read in this year’s report,
we’ve made significant progress in the area of workplace safety. Diversity and inclusion are also real strengths today at GM. It’s an area that we’ve been working on for years, and, while there’s always room for improvement, we have some really interesting initiatives underway, such as our Take 2 re-entry program.

**How does the idea of sustainability fit into GM’s culture today?**

It’s hard to think of a business concept that incorporates sustainability more than our zero-zero-zero vision. If everyone is working toward that vision, then a sustainable mindset is automatically institutionalized and integrated by every function in the organization. We’ve also seen an enhanced awareness and appreciation of the potential for sustainability to create and drive business value — in part thanks to increased investor interest.

**In what way?**

Asset managers are placing a much greater interest on nonfinancial issues. One in every four dollars under asset management in the U.S. now considers ESG(Environmental, Social and Governance) criteria. That creates a very tangible and universal language that everyone in the company can understand. So whether you’re a new or seasoned employee, whether you’re in finance or quality, you can now see a clear line between sustainability-related principles and initiatives and how the capital markets are valuing our business. That permeates the way we do business and the thoughts and considerations that we put into our work.

**Are you engaging more with ESG-minded investors? What do those engagements look like?**

We’re engaging much more frequently and see these engagements as critical for two reasons. First, we’re committed to being transparent and continually try to publicly share more data. We want to engage with as many players in the ESG community as possible — investors, as well as raters and rankers — to ensure that GM data is being represented accurately. Second, and equally as important, engagement is an opportunity to provide context. Data is just data until you talk about it. That’s when investors can really get an understanding of what we’re doing, why we’re doing it and the progress that is being made.

**Has this influenced your decision to report across more frameworks, such as SASB and TCFD?**

To some extent it has been in response to feedback from investors, but we also look to these various frameworks to help determine where we should focus our attention. They provide us a way to analyze gaps in our disclosure and help drive performance. We also are cognizant of the fact that the transportation industry is now the largest emitter of greenhouse gas (GHG) emissions. That means we have an obligation, and our stakeholders expect us to look at a broad set of criteria when it comes to climate-related disclosure.

**How has climate change evolved as an issue within GM’s business?**

Climate change and sustainability continue to be a focus of our business and have been incorporated into our enterprise risk management process. As a result, these topics are at the forefront of everyday decision-making and require active management and review at the highest levels of the company. Also in 2018, for the first time, a cross-functional team held a climate change workshop that envisioned several different scenarios related to a 2-degree warming. These developments really underscore how far GM has matured with respect to integrating sustainability into the business and how these topics are shaping where we go as a company.

**As you conclude this reporting cycle, what achievements are you most proud of over the past 12 months?**

Internally, it’s amazing to see how the entire organization is embracing our vision, values and behaviors on a daily basis. Hardly a meeting goes by when I don’t hear someone bring up how the topic under discussion or the decision being made will help us achieve our zero-zero-zero vision. As a veteran GM employee, I can report that the cultural shift is real and continuing to progress. Externally, I’m thrilled with the recognition that GM is receiving, particularly around gender diversity. This is an issue important to GM employees, and it’s really been brought to light through disclosure and reporting. When we get named to the JUST 100 two years in a row or earn the No. 1 spot for workplace gender diversity by Equileap, it’s a win for every GM employee everywhere in the world.
PERSONAL MOBILITY

Aspiration: Zero Congestion

More than 100 years ago, General Motors was part of a mobility revolution. We gave the world the automobile and, with it, changed how people moved, how businesses operated and how cities grew. Now, we’re driving a second revolution, one that involves the convergence of vehicles that are autonomous, connected, shared and electric.
GM’s lead in the development and deployment of autonomous vehicles (AVs) grew even stronger during 2018 with the addition of powerful partnerships. First, the SoftBank Vision Fund announced a $2.25 billion investment in Cruise, accelerating our plans to commercialize AV technology at mass scale. Next, GM and Honda announced our plans to collaborate on the development of a purpose-built AV that can be manufactured at high volume for global deployment. Honda’s expertise in space-efficient design will help us create a vehicle unlike any the world has seen. We will also explore other ways to commercialize the Cruise platform, such as an autonomous ride-hailing network. Honda’s total commitment to these initiatives will be $2.75 billion over 12 years.

GM began assembling Cruise AVs at our Orion Assembly Plant in 2017, using our manufacturing scale and expertise to help Cruise quickly test and prototype its vehicles. With Honda on board, the path to production for Cruise AVs is even faster. Says Kyle Vogt, Cruise’s co-founder as well as its President and Chief Technology Officer, “The Honda partnership paves the way for massive scale.”

The SoftBank Vision Fund announced a $2.25 billion investment in Cruise
It’s widely acknowledged that the potential addressable market for self-driving cars is enormous. What is Cruise doing to capture that opportunity?

In the simplest terms, we’re trying to build a driverless car that is safer, more secure and provides a better user experience at a lower cost than a human-driven car. But that simple problem statement turns out to be the biggest engineering challenge of our generation. We have a strong view on the necessary inputs to meet the challenge: engineering talent, capital and deep integration with an automaker. Cruise is the only company with all of those pieces.

What are the major business applications presented by self-driving cars?

Four applications that we see today are rideshare, delivery, data sharing and licensing. We have active business development going on in each of these areas. For example, we’re running an internal rideshare program for Cruise employees, which is giving us insight on running self-driving cars not just for development purposes but in a real ride-hailing context. On the delivery front, we recently announced a partnership with DoorDash for food delivery, which will further inform design and development. Within data and licensing, we are exploring opportunities such as sharing lane-level traffic data collected by AVs with logistics operators to further decrease congestion.

How is Cruise improving its vehicles’ safety on the roads?

Safety is our only gating metric that will determine when we’re ready to launch in full driverless mode. The goal is not just to exceed human driver performance, but to continue to improve far beyond it. That’s why we’re doing almost all vehicle testing in downtown San Francisco, a highly complex environment. When our test vehicles are confronted daily with situations like unprotected left turns, construction zones, and plenty of cyclists and pedestrians, the vehicle is naturally going to learn more per mile of driving than if it were in a suburban environment.
Today, cars spend an average 95 percent of their time parked, rather than doing what they were built to do: drive. Many drivers need vehicles only during certain hours or days of the week, or to get to destinations not served by public transit. What matters most to these customers is not ownership, but access.

Maven, GM’s personal mobility brand, is a response to these changing behaviors. It has evolved into one of the fastest-growing mobility brands in North America. The app-based sharing service offers GM vehicles to rent by the hour, the day, the week or the month. Maven services are designed for many car-sharing communities and needs:

- **City station-based car sharing:** Vehicles are available to rent for round trips by the hour, day or month.
- **University campus sharing:** Cars are available on campus for students to rent.
- **Maven Gig:** Cars are available for rent by the week for rideshare and delivery drives.

The latest addition to the Maven platform is a peer-to-peer offering that allows Chevrolet, Buick, GMC and Cadillac owners and eligible lessees to rent their personal vehicles to Maven members, enabling owners to generate income from their cars when they would otherwise be parked. The service began with a beta in select markets in July 2018. Since we’ve introduced the offering, the fleet of Maven cars in the Car Sharing platform has doubled in size in markets such as Detroit.

We’re also adopting a sharing mindset within our own team. When Maven employees were challenged to share a trip with a colleague once a week, they logged 10,000 shared miles in just three months. Continuing to scale these solutions could mean even more shared miles — and more human connections.
Aspiration: Zero Emissions

The CO2 emissions of our global vehicle fleet represent 77 percent of our carbon footprint today. We aim to take that percentage to zero. Our journey to zero emissions entails a commitment to develop and deploy advanced technologies and to significantly enhance traditional ones.
When the National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) proposed to amend the U.S.’s Corporate Average Fuel Economy (CAFE) and greenhouse gas (GHG) standards, GM took the opportunity to weigh in. We believe that a single, 50-state solution is the most effective way to move the U.S. to a leadership position in electrification.

That’s why we’ve called for a National Zero Emission Vehicle (NZEV) program based on existing ZEV programs that would establish requirements for automakers to incorporate ZEVs as an increasing part of their portfolios, up to 25 percent by 2030. It would also establish a Zero Emissions Task Force to promote complementary policies, such as charging infrastructure investments, renewed federal incentives for EV purchasing, and regulatory incentives to support U.S. battery suppliers.

This program could place more than 7 million long-range EVs on the road by 2030, while reducing CO2 emissions by 375 million tons between 2021 and 2030. It would also encourage American innovation and preserve our industrial strength while making EVs more affordable.

The stakes are high, and time is short. Governments and industries in Asia and Europe are working together to shift to an all-electric future, and we believe that the U.S. has a similar opportunity to lead.

More Than Just Lower Emissions

Shifting to zero-emissions vehicles will not only protect the environment—it will also strengthen American manufacturing and allow us to remain competitive. EVs will help support:

Local manufacturing
The Bolt EV is assembled in the U.S., with suppliers of Bolt EV components and systems in 16 states.

Global competitiveness and leadership
China spent more than 25 times more on vehicle electrification than the U.S. over a five-year period. Without new U.S. policy and R&D investment, the majority of EV batteries and vehicles will be built overseas.

Energy security
EVs can help reduce dependence on a single source of energy, which would ensure uninterrupted logistics in the event of an energy shortage or embargo.

National infrastructure
Infrastructure projects are needed to prepare the grid and roads for an electric future. Such projects would create jobs and be an economic catalyst for the nation, while increasing visibility of EVs.
Expand EV Portfolio

Acting on our vision of a zero emissions future, GM’s strategy is firmly focused on expanding its EV portfolio over the next decade.

Cadillac will be GM’s lead electric vehicle brand and will introduce the first model from the company’s all-new EV architecture. This architecture will be the foundation for an advanced family of profitable EVs, including an array of body styles and front-wheel, rear-wheel and all-wheel configurations. The output of vehicles’ battery systems will be adjustable based on vehicle and customer needs, all with a relatively short design and development lead time.

To support these commitments, we are ramping up production of EVs in the United States. We have announced a production increase for the Bolt EV, with a new LG Electronics facility in Hazel Park, Michigan, making battery packs to supply our Orion Assembly Plant.

GM will also invest $300 million in our Orion Township, Michigan, assembly plant to produce an all-new EV from Chevrolet. The new EV was originally slated for production outside the U.S., but we decided to bring it to Orion due to the facility’s experience with the Bolt EV. The new vehicle will be designed, engineered and manufactured based on an advanced version of the Bolt EV architecture. The decision also supports the rules of origin provisions in the proposed United States, Mexico and Canada Agreement. The investment will bring 400 new jobs to the Orion facility.

THE ELECTRIC OPPORTUNITY IN CHINA

A key market in GM’s global strategy for an all-electric future is China, where demand for EVs is high and government policies encourage rapid adoption. In 2018, we revealed the Baojun E200. China is the world’s largest EV market, boasting half of the world’s public EV charging infrastructure as of the end of 2018. Our growing sales and portfolio in China will further enable us to introduce new vehicles and scale EV adoption globally.

1 million EVs sold in 2018
20% by 2025 Expected NEV vehicles sales in China
10 GM NEV models launched between 2016 and 2020
200 million Electric kilometers driven by GM China customers

Reduce Weight in Our Toughest Vehicles

The Sierra Denali 1500 and the Sierra AT4 1500 large pickups are built to withstand heavy-duty tasks, from trailering heavy equipment to carrying hefty cargo. A newly designed cargo bed for 2019 vehicle models, known as CarbonPro, will help them stay up to these tasks with less vehicle weight. CarbonPro beds are made with a lightweight carbon fiber composite that weighs 25 percent less than a traditional steel bed, removing roughly 62 pounds of vehicle mass. Its grained surface also negates the need for bed liners, potentially saving a total of 100 pounds of weight.
But the material does not sacrifice durability—in fact, CarbonPro is now the most scratch-, dent- and corrosion-resistant pickup bed in the industry. Validation testing for the bed included drop tests using cinder blocks, 1,800-pound loads of gravel and water-filled steel drums; extreme temperature testing in environments from Arizona to Ontario; and scratch testing performed using a snowmobile with metal studs on the track driven into the bed and accelerated at full throttle. The CarbonPro bed withstood it all.

GM’s supplier can produce one CarbonPro cargo bed about every 10 minutes with almost no waste created in the manufacturing process. As sheets of carbon fiber are trimmed to fit the cargo beds, scraps are ground and used for other pieces of the design. Because the entire process happens in a single Indiana facility, recycling is quick and efficient.

The benefits of carbon fiber are numerous, but it remains expensive to work with. Now that GM has foundational expertise working with this material to launch the CarbonPro, we may explore opportunities to purchase carbon fiber in greater volumes to further decrease vehicle weights across our portfolio.

Apply Efficient Fundamentals Across Our Portfolio

As GM makes progress toward an all-electric future, we are also optimizing our vehicle lineup of today. We are doing so through a strategy that emphasizes Efficient Fundamentals, continual improvements that are making our conventional vehicles lighter and more fuel-efficient. For example, the 2019 Chevrolet Silverado 1500 is now equipped with Dynamic Fuel Management (DFM), which means that the engine will operate more often with a reduced number of cylinders, saving fuel across the board. This industry-first cylinder deactivation technology enables the 5.3- and 6.2-liter V-8s to operate in 17 different cylinder patterns to optimize power delivery and efficiency.

Chevrolet first introduced its Active Fuel Management cylinder deactivation system in 2005, and DFM is a natural progression of that technology. During an industry-standard test schedule, the 2019 Silverado 2WD with the 5.3-liter V-8 and DFM operated with fewer than eight active cylinders more than 60 percent of the time. The engines also feature driver-selectable stop/start technology that helps save fuel in stop-and-go traffic. In early 2019, GM announced plans to invest $22 million at our Spring Hill, Tennessee, manufacturing complex to enable the engine plant to build 6.2-liter V-8 engines equipped with DFM. The investment will enable us to extend this efficiency-boosting technology to more GM vehicles.

We are also reducing emissions by decreasing vehicle weight. Take the all-new 2019 GMC Sierra Denali, which replaced standard steel inner panels and floor with a lightweight, purpose-designed carbon fiber composite that offers best-in-class dent, scratch and corrosion resistance. The new material is 62 pounds lighter than the steel version. Our approach also incorporates aluminum for the doors, hood and tailgate, while relying on steel for the fenders, roof and standard cargo box to shave up to 370 pounds from the prior model.

2019 Green Car Technology for the Year
Chevrolet Dynamic Fuel Management System

“Chevrolet Dynamic Fuel Management epitomizes the innovation that continues to make internal combustion engines more efficient and relevant in an increasingly electrified world.”

— Ron Cogan, Editor, Green Car Journal
Aspiration: Realize Everyone’s Potential

To win and keep talent, we must provide a workplace culture that encourages the development of our employees’ full potential, fulfills their long-term individual aspirations and achieves full engagement. We are also mindful that our global customer base is diverse, and our global workforce must possess an equally diverse set of insights, skills and experiences that meet our customers’ needs.
GM’s people will always be our greatest strength. Every job is important, whether forming sheet metal for our trucks, manufacturing engine blocks, assembling a next-generation electric vehicle, or picking parts for aftermarket sales. The training and development we invest in our people means that they are not easily replaced. Whenever possible, our goal is to keep highly skilled people at GM, setting both them and our company up for the long term.

One way we’re doing this is by adhering to a responsible employer philosophy, which includes commitments to create job opportunities, pay workers fairly, ensure safety and promote wellness. For example, GM pays a living wage and offers quality health care coverage to all our employees, 401k plans with matches and paid time off to cover vacations, sick leave, parental leave and military leave. We also protect workers from harmful and hazardous conditions by adhering to strict health and safety standards.

Beyond these fundamentals, we provide opportunities for career advancement, skills development and educational attainment through structured training programs and programs to reimburse college expenses. This approach is particularly important during times of workforce transition. As our products change and our operations evolve, we do all we can to support employees. When workers are displaced because of a plant production adjustment, we provide opportunities at other GM facilities. If they choose to move, relocation packages are available to help them with their expenses, as well as allowing them to retain their seniority and benefits. The same is true regarding workers at GM plants that will be unallocated in the near future. We have positions for all U.S. hourly employees impacted by this decision. In Canada, we worked with local organizations to identify thousands of open positions at other manufacturing businesses and connected affected employees with these opportunities. We offered relocation services to employees who accepted other jobs within GM, and outplacement services, like resume writing and interview skills training, to those who chose to seek jobs elsewhere.

People are taking notice of GM’s efforts to be a responsible employer. We were recently named—for the second year in a row—to the JUST 100, a list developed by JUST Capital that ranks companies on the issues that Americans care about. The criteria for inclusion on the JUST 100 come directly from a survey of more than 80,000 Americans, and the No. 1 priority for survey participants is that they want to see fair treatment of workers from the nation’s biggest businesses. Our inclusion on the list, and the fact that GM’s ranking increased 56 positions to number 14 between 2017 and 2018, is a useful barometer to demonstrate that when it comes to people, GM is doing things right.
GM’s commitment to the LGBTQ community is at the core of our company’s policies. We have offered same-sex domestic partner benefits for more than a decade and extended same-sex spousal benefits to married LGBTQ couples in 2012. We also have a strong antidiscrimination policy that protects LGBTQ employees at GM. Beyond these measures designed to increase inclusion for our own employees, we recognize the need for a federal standard that guarantees these rights for LGBTQ individuals everywhere. That’s why GM has signed the Business Coalition for the Equality Act—becoming the first and only automaker to do so.

The Equality Act would provide the same basic protections to LGBTQ people as are provided to other protected groups under federal law, not only in the workplace but also in housing, credit and jury service. This bipartisan bill was introduced in both the U.S. Senate and House of Representatives in 2019, and upon introduction had the most congressional support of any piece of pro-LGBTQ legislation in history. GM is proud to join nearly 200 other companies in supporting this important bill.
Aspiration: Positive Environmental & Social Impact

There are very few companies that operate at GM’s level globally. That scale gives us enormous influence to innovate in the areas of environmental and social excellence. Moreover, when we reduce our operational impact, we operate more efficiently. Efficient operations translate into lower cost structures and higher levels of quality, both of which contribute to our zero-emissions goal.
GM has pledged to meet the electricity needs at all our global operations with renewable energy by 2050. We’re about 20 percent of the way there, due in part to a series of power purchase agreements made in 2018.

See the progress that GM is making in states across the U.S. to source renewable energy for our own operations:

**Texas**
By sourcing energy from the Cactus Flats Wind Farm in Concho County and Los Mirasoles Wind Farm in Hidalgo County, we are meeting 100 percent of the electricity demand of 16 GM offices and facilities and more than 10,000 GM and GM subsidiary employees across Texas and the southeastern U.S.

**Ohio and Indiana**
Two agreements will allow our manufacturing facilities in these states to be powered by 100-percent renewable electricity: one with the Northwest Ohio Wind Farm in Paulding County, owned by Starwood Energy Group, and another with ENEL Green Power to source energy from the HillTopper wind farm in Logan County, Illinois.

**Michigan**
GM is among the first Michigan companies to participate in a new Consumers Energy program to source renewable energy. Through this program, the electricity used at our Flint Metal Center and Flint Engine Operations is now matched entirely with energy produced at the Cross Winds Energy Park II in Tuscola County.

Among the facilities that now run on wind energy is our Arlington, Texas, Assembly Plant. For reaching this milestone, the plant earned a spot on the U.S. Environmental Protection Agency’s National Top 100 List of the largest green power users. Arlington is also one of 74 GM facilities recognized by the EPA for achieving the ENERGY STAR® Challenge for Industry for reducing energy intensity by at least 10 percent within five years. GM is also recognized by the EPA as a Green Power Partner for using green power at levels that exceed benchmark requirements and updating the EPA each year on our green power use.

“Renewable energy is an important part of GM’s vision for a zero-emissions future,” says Rob Threlkeld, global manager of Renewable Energy. “The EPA’s support and recognition sends a strong message that transitioning to renewables is good for business and the environment, and helps make a greener grid and cleaner energy more accessible for everyone.”

In early 2019, GM partnered with Google, Facebook, Walmart and more than 300 other companies to launch the Renewable Energy Buyers Alliance (REBA)—the largest group of corporate renewable energy buyers in the United States. By working to unlock the marketplace for organizations to buy renewable energy, REBA hopes to bring more than 60 gigawatts of new renewables online in the U.S. by 2025. The new association will function as a membership organization spanning diverse industries and business types, and whose leadership circle alone represents annual revenues of $1 trillion, millions of jobs and more than 1 percent of U.S. annual electricity consumption (48 terawatt-hours).
**OPERATIONAL COMMITMENTS**

**Reduce Energy Intensity by 20 Percent**

(MWh/vehicle)

GM implemented over 230 global energy savings projects and initiatives in 2018 resulting in 580 GWh of reduction, or 3 percent absolute. Unfortunately with 5 percent volume reduction and a large number of product launches, our energy intensity increased by 3.7 percent from 2017. With increased plans for Energy Performance Contracting, we expect to return to our pathway to 2020.

**New Science Goal Established for Operations**

**Absolute Reduction of Carbon by 31 Percent**

GHG, Scope 1&2 Market Based, million metric tons

GM met our Scope 1 and 2 GHG 2020 goal in 2017 and developed an absolute goal to 2010-2030, based on science, to limit global temperature rise to below 2 degrees Celsius above pre-industrial levels. Energy efficiency in our operations and RE100 provide the methods to meet our goal.

**Increase Renewable Energy to 125MW**

(MW)

We have already exceeded the 2020 goal and are working toward a new target of meeting 100 percent of the electrical needs of our global operations through renewable energy by 2050. We are approximately 20 percent of the way toward this new goal.

**Reduce Water Intensity by 15 Percent**

(M3/vehicle)

Similar to energy, with a reduction in production volume of 5 percent, even with water conservation projects implemented, GM had a 0.6 percent intensity increase. Our plan to meet the pathway to 2020 is to use Water Performance Contracting.

**ENERGY REDUCTION**

8 Years

U.S. EPA Energy Star® Partner of the Year—Sustained Excellence in Energy Management

1 Assembly Plant

U.S. EPA Energy Star certified
Reduce Waste Intensity by 40 Percent
(kg/vehicle)

A new Sustainable Materials Management function is allowing us to continually reduce waste through design, materials selection and repurposing of items that would otherwise go to waste.

Reach 150 Landfill-Free Sites

Manufacturing actions taken as part of GM’s transformation led to several plants being unallocated, which in turn decreased our total number of landfill-free sites.

Reduce VOC Emissions by 10 Percent
(metric tons/vehicle)

Though we achieved our commitment in 2013, we continue to lower VOC emissions annually.

Establish a Wildlife Habitat Certification (or Equivalent) at Each GM Manufacturing Site Where Feasible by 2020

We were gratified to add four new certified wildlife habitats during 2018, thanks to the commitment and enthusiasm of our manufacturing employees and leadership. We are currently at nearly 85 percent of our goal.

Buildings
17 U.S. EPA Energy Star certified

Facilities
75 U.S. EPA Energy Star Challenge for Industry
Beat Plastic Pollution Worldwide

World Environment Day (WED) is a UN-sponsored event designed to encourage awareness and action regarding environmental protection. Each year, GM gets involved by amplifying environmental outreach activities in our facilities or communities. GM sites share their WED plans with the global network, and employees vote on the most creative and impactful WED outreach activities aligned with the year’s theme.

In 2018, 72 manufacturing and nonmanufacturing sites in 16 countries submitted more than 100 WED activities that reflected the year’s theme: “Beat Plastic Pollution.” Winning facilities for the competition included:

- **Talegaon, Maharashtra, India** – Employees participated in cleanups and shared ideas to combat plastic pollution. During one cleanup, nearly 840 pounds of waste were collected by more than 50 employees.

- **São Caetano do Sul, São Paulo, Brazil** – A coffee break room was covered in plastic materials and photos of animals affected by plastic waste, with a sign that read, “If you feel uncomfortable, imagine them.” Employees were also challenged to submit 15-second videos showing how their family strived to beat plastic pollution.

- **Silao, Guanajuato, Mexico** – The facility invited commercial partners, contractors, external business partners and the local community to participate in an annual fair about beating plastic pollution, with activities explaining plastic’s various dangers. As a first step, the facility recently eliminated plastic straws from its cafeteria.

5 Ways GM Is Applying Circular Economy Principles

- Plastic caps and shipping aids
- Shredded test tires
- Melted scrap aluminum shavings from machining transmission casings
- Used water bottles
- Shipping crates

- Radiator shrouds for the Chevrolet Silverado and GMC Sierra pickups
- Air and water baffles for a variety of vehicles
- More transmission casing
- Coat insulation for the homeless
- Planters in 33 urban gardens
Aspiration: 
Earn Customers For Life

Our purpose is to earn customers for life. That’s why we put customers at the center of everything we do. It’s a commitment that is the right thing to do for our customers and our business: a single percentage point improvement in U.S. sales retention is equivalent to selling about 25,000 vehicles.
Most car crashes result in the need for vehicle repairs. As advanced technology in vehicles grows more complex, however, so does the complexity of the repairs and the need for repair facilities with a proper knowledge of the technology.

This was the thinking behind the launch in 2018 of the GM Collision Repair Network, which will connect drivers with GM dealers and independent collision repair facilities. After a collision, the Repair Network, combined with OnStar, helps owners locate repair facilities where qualified technicians follow proper repair procedures using original equipment replacement parts.

GM dealerships and independent collision repair facilities who want to join the network must meet requirements for customer service, technical training and equipment. In turn, they gain the backing of GM quality standards to help them get every job done right the first time. The Collision Repair Network will build on GM’s current training and tools-focused programs, while adding standards for pre- and post-repair scanning, repair procedures, calibration and overall repair. Repair facilities in the network should experience reduced time spent on diagnosing and pulling repair procedures — leading to a more streamlined repair process for facilities and customers alike.

Dealers are meeting customers’ needs in China with the CAREMORE service brand, launched by our SAIC-GM joint venture. Working with ACDelco and other partners, CAREMORE extends SAIC-GM’s scope of aftersales service to better meet customer needs and resolve pain points related to quality, service and accessibility.

Cadillac Dealers Excel in China
Cadillac was ranked No. 1 among mainstream luxury brands in the 2018 China Automobile After-Sales Service Consumer Experience Excellent Brand award presented by the China Automobile Dealers Association. Dealers were evaluated on five factors: service consultant, service facility, maintenance quality, maintenance time and maintenance price.
As we adapt to quickly evolving changes in the mobility space, we recognize that employees across GM have innovative ideas that may benefit our customers — and those employees need support to scale their ideas rapidly. This notion has led to the launch of iHub, a startup within GM product development innovation that serves as both a consultancy and incubator.

As a consultancy, iHub tackles tough problems to improve the GM customer experience. As an incubator, the group provides funding, resources and coaching to scale big ideas. Its signature programs include Synapse, a competition during which GM employee teams solve sponsored challenges to create the future of mobility.

During Synapse 2018, 29 teams were challenged to increase EV adoption by crafting an ownership experience that was aspirational and easy. The winning team proposed offering Maven credits to future Bolt EV owners to use gas-powered Maven cars for occasional long-range trips, helping to eliminate the range anxiety that might hold some people back from owning an electric vehicle.

iHub also sponsors BlacktopBuild, a hackathon that gives college students the opportunity to work on real business issues. During the second annual BlacktopBuild, held at the University of California Berkeley, students used machine learning to improve user experience for vehicle infotainment systems.
Aspiration:
Zero Crashes and Zero Workplace Injuries

Safety and quality form the foundation on which our business is built. We envision a world with zero traffic accidents and zero injuries among employees, contractors, suppliers and other individuals in our facilities around the world. By producing smart, connected vehicles and holding each other accountable, we believe this ambition is within reach.
Many vehicle crashes can be traced back to a specific cause. Determining what prevents crashes from happening, however, is far more difficult. New research from the Insurance Institute for Highway Safety (IIHS) hints at an answer.

IIHS examined police data on front-to-rear crashes involving model year 2013 through 2015 Buick, Cadillac, Chevrolet and GMC brands. They found that GM vehicles with autobrake and forward collision warning were involved in 43 percent fewer crashes and 64 percent fewer crashes resulting in injuries compared to the same vehicles without those features.

Forward collision warning without autobrake produced a smaller, though still significant, effect: 17 percent fewer crashes overall and 30 percent fewer crashes involving injuries. These findings suggest that GM’s advanced safety innovations are successfully stopping crashes in their tracks, especially when multiple safety technologies are combined. It’s a perfect example of how even incremental steps toward autonomous vehicles are already saving lives.

The results of the study also align with IIHS research of other automakers. With evidence of the effectiveness of these safety innovations growing, 20 OEMs, representing 99 percent of the U.S. auto market, have committed to making autobrake a standard feature on new passenger vehicles by 2022.
GM envisions a future where vehicles not only drive themselves, but also communicate seamlessly with other roadway users and even with infrastructure.

Cadillac is making progress toward the introduction of vehicles that are intelligent and connected by expanding Super Cruise, the world’s first true hands-free driver assistance technology for the freeway. The system uses precision LiDAR map data, GPS, a state-of-the-art driver attention system and a network of camera and radar sensors to enable hands-free driving on limited-access freeways. Super Cruise is available on the 2018 and 2019 CT6 model and will be available on all Cadillac models beginning in 2020 and other GM brands after 2020.

The system was officially introduced in China at the 2018 Asia Consumer Electronics Show and will initially be applied on the Cadillac CT6 40T Platinum prestige sedan. To ensure safe and efficient operation in China, local engineers conducted comprehensive verification of the technology. People of different ages, heights and genders were invited to test the Driver Attention System to ensure proper operation in both China and in North America. GM China is partnering with AutoNavi, a local leader in HD mapping technology, to ensure accurate and precise operation of Super Cruise in China.

Cadillac also plans to offer V2X communications in a high-volume crossover by 2023 and eventually expand the technology across Cadillac’s portfolio. Using V2X, compatible vehicles can be notified of hazardous road conditions, traffic light statuses, changing work zones and more. Its range of nearly 1,000 feet means drivers can be alerted to possible threats in time to avoid a crash.
A corporate culture that continues to grow more attuned to the critical importance of safety, combined with better implementation of performance standards, led to significant improvement in GM’s safety performance in 2018. We reduced lost time injuries by 26 percent and recordable incidents by 15 percent in 2018 compared to 2017.

This performance is driven, in part, by high employee perceptions of our safety culture. In our 2018 Workplace of Choice survey, more than 90 percent of salaried employees said that they feel that workplace safety and security are important at GM, and that they feel comfortable raising and reporting product safety issues. These scores are significantly higher than Aon’s global average. In addition, three-fourths of GM hourly employees have favorable perceptions of safety.

We are continuing to create a culture of safety through numerous initiatives. One of these focuses on how each team member’s day is full of choices — choices that can make workplaces safer or less safe for themselves and others. To eliminate injuries and fatalities at work, we are drawing people’s attention to the countless choices they make every day, asking them to choose safety at every turn, which ultimately changes behaviors.

GM Lifesaving Rules

**WE ALWAYS:**

- Use required fall hazard/prevention controls when working at heights.
- Wear seat belts.
- Ensure hazardous energies are isolated or controlled when exposed to hazardous energy or working on equipment.

**WE NEVER:**

- Work on electrical equipment unless qualified and always use the appropriate protective equipment and tools.
- Never enter a confined space without following proper entry procedures.
- Never defeat, bypass, remove or render ineffective any safety device without authorization.
COMMUNITY

Aspiration:
Safe, Smart & Sustainable Communities

One of our corporate purposes is to serve and improve the communities in which we live and work around the world. Business sustainability is directly linked to the health of the communities in which GM and our customers reside. We make strategic investments that create lasting economic growth in three key areas: science, technology, engineering and math (STEM) education; vehicle and road safety; and sustainable communities.
It’s never too early to nurture interest in STEM. That’s why GM encourages students, educators and entrepreneurs to explore STEM subjects and tackle real-world challenges. One longstanding—and fun—way we do this is by mentoring youth robotics teams. One GM-guided team is the Mercy Midnight Storm, an all-girls robotics group. Eight of the team’s 11 mentors are GM employees, who help the Mercy Midnight Storm design, code and manufacture remote-controlled robots. The groups are given six weeks to go from sketch to battle-ready, so the pressure is intense. The girls met at least 10 hours a week during build season at the Detroit Hispanic Development Corporation. In their first year of competition, the Mercy Midnight Storm earned the prestigious Rookie All-Star award at the 2016 FIRST (For Inspiration and Recognition of Science and Technology) Robotics competition in Michigan, made the district event finals and went to Worlds in St. Louis. In 2018, the team had a visit from GM CEO Mary Barra.

GM also supports teachers of STEM subjects through a partnership with the International Society for Technology in Education (ISTE), and in 2018 provided training in artificial intelligence for more than 70 teachers. During National Teacher Appreciation Week, we also matched community donations of $500,000 to 1,789 teachers through a DonorsChoose.org campaign and conducted an employee microgiving campaign for teacher development and classroom supplies through United Way.

We also partnered with Solve, an MIT initiative, to fund transformational solutions in STEM education from tech entrepreneurs. Two finalists were selected for both the Work of the Future challenge and the Teachers and Educators challenge and will split GM’s $100,000 prize to scale their concepts.