

# GENERAL MOTORS



Zero Crashes.



2017  
Sustainability  
Report



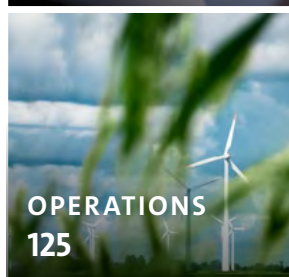
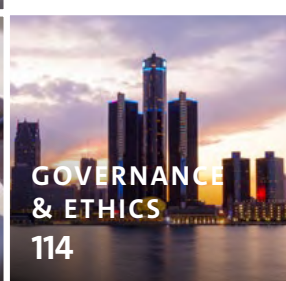
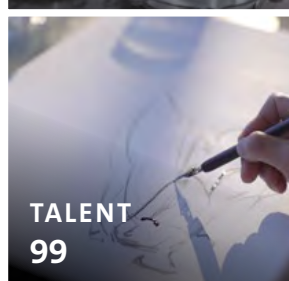
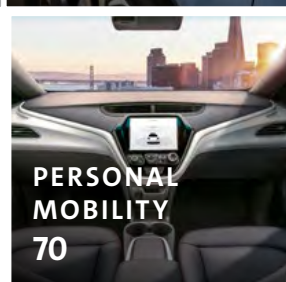
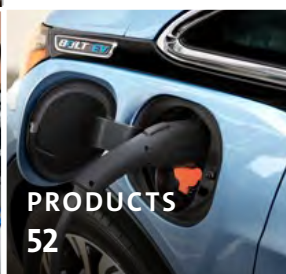
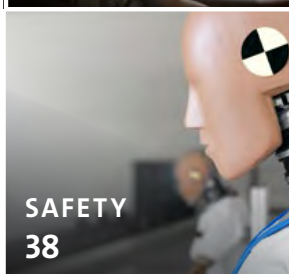
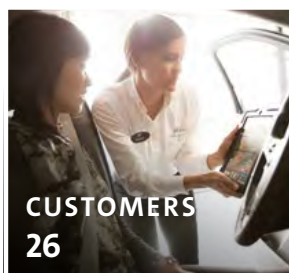
● Zero Emissions.



Zero Congestion.



# IN THIS REPORT



ASPIRATIONS	3
CORPORATE PROFILE	5
LEADERSHIP MESSAGE	6
2017 HIGHLIGHTS	10
REGIONAL MESSAGES	
GM North America; GM Africa & Middle East Operations	11
GM International	13
GM China	15
SUSTAINABILITY ROAD MAP Q&A	17
SUSTAINABILITY STRATEGY	19
STAKEHOLDER ENGAGEMENT	21
REPORTING PRACTICES	23
IMPACTS	
Customers	26
Safety	38
Products	52
Personal Mobility	70
Supply Chain	84
Talent	98
Governance & Ethics	113
Operations	124
Community	142
GRI CONTENT INDEX	156
UNGC	167
UNSDG	168
SASB	170
TCFD	173
STATEMENT OF ASSURANCE	177
FORWARD-LOOKING STATEMENTS	180

# ASPIRATIONS

WE ACHIEVE SUSTAINABLE PROGRESS BY SETTING OUR SIGHTS HIGH.



## CUSTOMERS

*Earn Customers for Life*



## SAFETY

*Zero Crashes  
Zero Workplace Injuries*



## PRODUCTS

*Zero Emissions*



## PERSONAL MOBILITY

*Zero Congestion*



## SUPPLY CHAIN

*Positive Environmental &  
Social Impact*



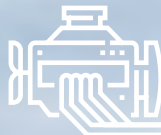
## TALENT

*Realize Everyone's Potential*



## GOVERNANCE & ETHICS

*Full Transparency & Integrity—  
Always*



## OPERATIONS

*Positive Environmental &  
Social Impact*



## COMMUNITY

*Safe, Smart & Sustainable  
Communities*



# GENERAL MOTORS VISION

A WORLD WITH **ZERO** CRASHES | **ZERO** EMISSIONS | **ZERO** CONGESTION

## We Are General Motors

WE ARE COMMITTED TO **SAFETY** IN EVERYTHING WE DO

WE EARN **CUSTOMERS** FOR LIFE

WE BUILD **BRANDS** THAT INSPIRE PASSION AND LOYALTY

WE TRANSLATE BREAKTHROUGH **TECHNOLOGIES** INTO VEHICLES AND EXPERIENCES THAT PEOPLE LOVE

WE CREATE **SUSTAINABLE** SOLUTIONS THAT IMPROVE THE **COMMUNITIES** IN WHICH WE LIVE AND WORK

What We Do

DELIVER SAFER, SIMPLER  
AND SUSTAINABLE  
SOLUTIONS

How We Do This

BY PUTTING THE  
CUSTOMER AT THE CENTER  
OF EVERYTHING WE DO

Why We Exist

TO MOVE HUMANITY  
FORWARD

## What We Value

### CUSTOMERS

We put the customer at the center of everything we do. We listen intently to our customers' needs. Each interaction matters. Safety and quality are foundational commitments, never compromised.

### EXCELLENCE

We act with integrity. We are driven by ingenuity and innovation. We have the courage to do and say what's difficult. Each of us takes accountability for results, drives for continued efficiencies and has the tenacity to win.

### RELATIONSHIPS

Our success depends on our relationships inside and outside the company. We encourage diverse thinking and collaboration from the world to create great customer experiences.

## How We Behave



### THINK CUSTOMER

I consider the customer's needs in everything I do.



### INNOVATE NOW

I see things not as they are but as they could be.



### LOOK AHEAD

I make decisions now with the long-term view in mind, and I anticipate what lies ahead.



### ONE TEAM

I collaborate cross-functionally to achieve enterprise-wide results.



### BE BOLD

I respectfully speak up, exchange feedback and boldly share ideas without fear.



### IT'S ON ME

I take accountability for safety and my own actions, behaviors and results.



### WIN WITH INTEGRITY

I have a relentless desire to win and do it with integrity.

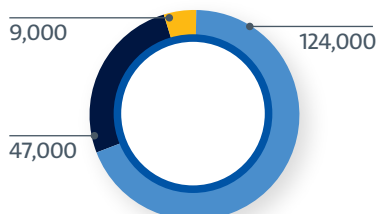


# CORPORATE PROFILE

## People

### 2017 Employees by Segment

GM North America GM International  
GM Financial



**180,000**  
TOTAL EMPLOYEES  
WORLDWIDE

## Brands

Buick	Cadillac	
Chevrolet	GMC	
Holden	Baojun	
Jiefang	Wuling	
OnStar	Maven	Cruise

## Reach

**5** CONTINENTS  
**12,450** DEALERS  
SELLING IN **125+** COUNTRIES

## Market Position

**#1**  
NORTH  
AMERICA

**#1**  
SOUTH  
AMERICA

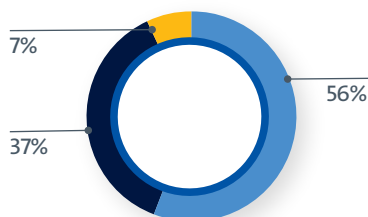
**#2**  
CHINA

**#3**  
ASIA, AFRICA,  
MIDDLE EAST

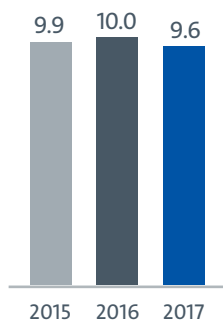
## Sales

### 2017 Sales by Region

North America International Europe



### Total Sales\* (millions of units)



\* Includes sales from Europe

### U.S. Sales as a Percentage of Industry

**26.4%**  
TRUCKS

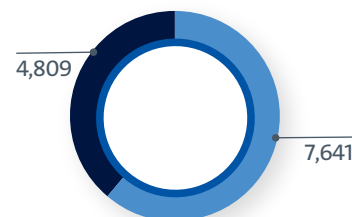
**15.1%**  
CROSSOVERS

**11.5%**  
CARS

## Distribution

### Authorized Dealerships by Region

North America International



**13.8%**  
FLEET SALES AS A  
PERCENTAGE OF  
GLOBAL SALES



# TO OUR STAKEHOLDERS

General Motors Chairman and CEO Mary Barra.



Our vision is a future  
with zero crashes,  
zero emissions and  
zero congestion.

For more than a century, automobiles have driven our society and economy, giving us unprecedented mobility and transforming the way we work and live.

Today, we are in the midst of another revolution as groundbreaking technologies and evolving customer lifestyles transform our vehicles and how we use them.

At General Motors, our vision of a future with zero crashes, zero emissions and zero congestion addresses the challenges associated with the freedom of mobility. This bold, ambitious vision has the potential each year to save 1.25 million lives by eliminating human error, the root of more than 90 percent of crashes; eliminate over 2 billion tons of carbon dioxide; and give commuters back the week of time they spend in traffic.

Autonomous, electric, shared and connected vehicles will fuel this transformation. Each is leading-edge on its own. Combined, they will provide customers with safer, better and more sustainable vehicles.

Our journey to this future is underway. We have the right team, the right technology, the right partners and the global manufacturing scale to bring these innovative solutions to more customers, more quickly. And our strategy to transform GM into the world's most valued automotive company includes several major initiatives to lead this revolution.

#### *Vehicles That Drive Themselves*

Self-driving vehicles will reinvent our society, not only by reducing crashes and saving lives, but also by unlocking the power of mobility for those unable to drive.

General Motors is the only company with a fully integrated solution to produce self-driving vehicles at scale. With our 2017 acquisition of LiDAR developer Strobe, we now have every capability—from simulation and mapping software to safety validation and autonomous vehicle (AV)-specific vehicle design—under one roof. And we've moved quickly, developing three generations of self-driving vehicle technology in just 14 months.

After more than a year of building test vehicles, we are shifting to build production versions at our Orion Assembly plant in Michigan. The Cruise AV, which is part of our plans to commercialize in a dense urban area in 2019, will be the first production-ready vehicle built from the ground up to operate safely without a driver, steering wheel, pedals or manual controls. It represents a significant milestone on our path to deploying self-driving vehicles next year.

In preparation, we filed a Safety Report and Safety Petition with the U.S. Department of Transportation in January 2018 to enable us to safely deploy our Cruise AV zero-emission, self-driving vehicle.

Last month, we further strengthened our plans to commercialize AV technology at large scale through a landmark deal with the SoftBank Vision Fund, the world's largest tech and ridesharing investor. SoftBank is investing \$2.25 billion and General Motors is investing \$1.1 billion in GM Cruise, a new, majority-owned subsidiary. With SoftBank as a partner, we gain a tech leader that shares our vision, believes in our long-term business model and appreciates our integrated approach to AV development. It also strengthens our ability to attract high-tech talent, which is vital to our success.

In the interim, we continue to rigorously push our test vehicles to their limits to get the safest, smartest AVs on the road as soon as possible. The majority of our testing is taking place in San Francisco, a highly complex urban driving environment with unpredictable situations that arise nearly 50 times more often than in suburban settings.

To give customers a glimpse into a self-driving future, we are introducing driver-assist technologies. Last fall, Cadillac introduced Super Cruise technology in the 2018 CT6 sedan. Using cameras and radar, Super Cruise can safely pilot the vehicle on the highway without driver input, tracking facial expressions to ensure the driver's eyes are on the road.

### *Why Our AVs Are Also EVs*

We believe autonomous vehicles must also be electric vehicles. AV systems integrate more seamlessly with EVs than vehicles with conventional internal combustion engines. All-electric AVs also will help accelerate more widespread adoption of electric propulsion technologies, allowing us to move faster to achieve our goal of eliminating crashes, emissions and congestion.

In 2017, our own groundbreaking Chevrolet Bolt EV, Chevrolet Volt plug-in hybrid and Cadillac CT6 Plug-in accounted for nearly a quarter of industry EV and plug-in sales in the U.S. Furthermore, we have seen a dramatic increase in customer miles traveled in our electric vehicles since we introduced the Volt in 2010.

As of December 2017, drivers of five GM electrified models, including the Bolt EV, have racked up more than 2.6 billion EV miles. We are encouraged by this momentum and plan to increase Bolt EV production in response to global demand during 2018.

And this is just the beginning of our path to an all-electric future, to which we remain committed, regardless of fuel economy standards. We have seen the cost of developing, owning and operating an EV decrease as battery technology advances and as we drive cost efficiencies. In fact, we are well on our way to bringing at least 20 new, all-electric models to market globally by 2023—our next step toward a zero-emissions world.

China is an important part of our strategy and is currently the world's largest market for electric vehicles. A new battery plant in Shanghai, through our SAIC-General Motors joint venture, will help position us to lead in that market. By 2020, we will introduce at least 10 plug-in hybrids or EVs in China, and we have already launched the Buick Velite 5 extended-range EV, Cadillac CT6 Plug-in and Baojun E100 battery electric vehicle and introduced the Buick Velite 6 plug-in hybrid and Velite 6 EV.

A successful transition to EVs also depends on a robust charging network, assuring consumers they can drive their EVs anywhere, anytime. In the U.S., EVs from all manufacturers can access about 17,000 public charging stations—including about 2,000 DC fast chargers—but more will be needed as more consumers discover the benefits of EVs. We're committed to working with utilities and other partners to accelerate the availability of chargers.

### *Sharing: Mobility on Demand*

One source of insights on EV charging comes from Maven, General Motors' shared mobility platform, where the Bolt EV is among customers' most popular choices.

Maven is helping us capitalize on the growing popularity of car-sharing, ridesharing and the freelance—or "gig"—economy, especially among millennials. Each shared vehicle can take approximately 10 others off the road, significantly reducing congestion in cities.



*Baojun E100 battery electric vehicles in China.*

With a fleet of General Motors vehicles available on demand through a mobile app, Maven operates in 17 North American cities, and its customers have driven more than 290 million miles. We've also partnered with EVgo to provide access to hundreds of chargers in major markets for our Maven Gig Bolt EV drivers.

Underlying these innovations—self-driving cars, electrification and shared mobility—is a powerful technological infrastructure. Our 20-plus years of OnStar leadership gives us an industry advantage, with nearly 14 million members on the road, and up to 245,000 member calls every day.

### *A Sustainable Business*

We've integrated sustainability into our business strategy and core operations. A sustainable mindset and focus on environmental, social and governance issues drives long-term value.

Today, our vehicle manufacturing process has the lowest environmental footprint in our history, thanks to steady progress toward achieving our 2020 operational commitments to reduce energy, carbon, water and waste intensity. In fact, we surpassed our carbon intensity commitment three years early, with a 22 percent reduction in operational carbon emissions since 2010.

Our footprint will continue to decrease as we get closer toward our goal of using 100 percent renewable energy to power all our global operations by 2050. By the end of 2018 we expect to be 20 percent of the way there.

In early 2018, our Flint Metal Center and Flint Engine Operations began drawing electricity from a wind farm in nearby Tuscola County—about 110,000 total megawatt hours per year. A dedicated energy procurement team continues to seek opportunities in wind, sun and landfill gas as they become available.

Also, with the recent addition of 27 newly certified facilities, General Motors has 142 landfill-free facilities globally—more than any other automaker. All our manufacturing operations in Canada, Mexico and South America are officially landfill free. General Motors has committed to reach 150 landfill-free operations globally by 2020, with the long-term aspiration of becoming a zero-waste company.



*A Chevrolet Cruze, equipped with vehicle-to-pedestrian (V2P) technology, offering enhanced safety for both drivers and pedestrians.*

Third parties recognize our commitment. General Motors is the only automaker on the 2017 Dow Jones Sustainability Index for North America, and is also on the World Index. We have also been named to CDP's Global Climate A List for disclosure and performance on climate change impacts, and its Supplier Climate A List for driving down emissions across our supply chain.

### *Powered by Top Talent*

Innovating for the future requires new skillsets and new ways of thinking. Our diverse and inclusive team brings wide-ranging perspectives and experiences to solving the complex transportation challenges of today and tomorrow.

Forty percent of our salaried employees have been with General Motors five years or less. These men and women, drawn from many of the same sources that feed the global tech economy, bring skills that complement the engineering and manufacturing expertise of our long-time General Motors employees. We recruit and train new employees with a focus on our values and on winning with integrity.



# LEADERSHIP MESSAGE



Participants at “Introduce a Girl to Engineering Day” at the Global Technical Center in Warren, Michigan.

As a company committed to reinventing transportation for all, we want and need everyone to participate. So, we are working to close the gender gap in engineering by investing in partnerships with national STEM advocates like Girls Who Code and Code.org. We have also increased our focus on vehicle and road safety and community empowerment, so we can enable more people to participate in the global economy and someday engage with General Motors as employees, suppliers or customers.

### *Changing Transportation, Changing the World*

We are General Motors. We transformed how the world moved in the last century. And we’re determined to do it again as we redefine mobility to serve our customers and shareholders, solve societal challenges and create new social value.

We are ready. We are leading. And we are working hard as one team, with integrity, to create a world that is safer, better and more sustainable for all.

A handwritten signature in black ink that reads 'Mary'.

Mary T. Barra  
Chairman and Chief Executive Officer

# 2017 HIGHLIGHTS



## JUST 100

GM is the only automaker in the JUST 100, a ranking of the most just companies where business behaviors align with priorities of the American public in environment, social and ethical factors. GM also ranked #1 in the auto sector.



## 2.6 billion

EV miles have been driven by drivers of five GM electrified models, including the Chevrolet Bolt EV, Motor Trend's 2017 Car of the Year.

## 20

Electric vehicles we committed to bring to market by 2023 as part of GM's vision of zero emissions.

## 180+

Autonomous vehicles are now in our test fleets in San Francisco, Phoenix, and Metro Detroit.

## 1st

GM introduces first true hands-free driving technology for the highway, called Super Cruise, on the 2018 Cadillac CT6. The system provides lane-centering and automatic control of speed and steering during highway driving with a unique driver attention system for safe vehicle operation.

## 40,000

U.S. secondary students will be reached through GM's support for Code.org, which trains 1,400 computer science teachers—just one of our broad set of STEM initiatives.



## 1st

Automaker to set sustainable natural rubber commitment in collaboration with suppliers, NGOs, and rubber industry that addresses deforestation, human rights and ethical business practices.

## 32%

of top leadership positions are held by women. GM is investing in leader skill development for women with its Women in Action initiative. More than 6,700 employees participate.

## 142

Landfill-free facilities around the world—more than any other automaker.

## 290 million+

Miles have been driven through Maven, GM's car-sharing platform now available in 17 cities to consumers for whom vehicle ownership is not always affordable or practical.

## 3

Consecutive years that GM has been named to the Dow Jones Sustainability Index for North America and the first time that GM was named to the DJSI World Index.





## REGIONAL MESSAGE

# NORTH AMERICA, AFRICA & MIDDLE EAST OPERATIONS

Today's automotive world is witnessing transformation at a breathtaking pace.

Alan Batey, President, GM North America  
Head of GM Africa & Middle East Operations

Our team is dedicated to driving for greatness—to lead and not follow—and to be fully accountable and respect our world and our environment.

In GM North America (GMNA) and GM Africa & Middle East Operations (GM-MEO), the pace of sweeping change becomes faster and more intense each year. Our ability to anticipate new challenges and our commitment to innovation remain our passion. Our team is dedicated to driving for greatness—to lead and not follow—and to be fully accountable and respect our world and our environment.

Our sales and earnings results in 2017 helped set the foundation for long-term success. GMNA sold more than 3.5 million vehicles, including record sales of crossovers and pickups. This helped the company earn record average transaction prices in the U.S., according to J.D. Power PIN estimates. North America also delivered an EBIT-adjusted margin of 10.7 percent, our third straight year above 10 percent.

Several other business results over the past 12 months have truly reinforced our leadership position:

- > We continued reducing sales to daily rental fleets, focusing instead on retail customers, and we lowered U.S. inventories to align supply with demand, helping to save costs.
- > GM has delivered four consecutive years of pickup sales leadership of mid- and large-size trucks through 2017.
- > We took the spotlight in the fast-growing crossover market, with the introductions of the 2018 Chevrolet Equinox and Traverse, Buick Enclave and GMC Terrain; then, we introduced the new definition of crossover luxury with the unveiling of the Cadillac XT4 in March of 2018.
- > Chevrolet remained the most awarded and fastest-growing brand for the fourth straight year. We expect that trend to continue as we introduce the all-new 2019 Silverado pickup and redefine the face of Chevrolet cars later this year.
- > Chevrolet was named J.D. Power's most awarded brand of 2017. Six different Chevrolet cars, trucks and SUVs won nine awards in J.D. Power's 2017 Vehicle Dependability, Initial Quality and APEAL Studies.
- > Chevrolet also delivered a third straight year of retail market share growth, gaining a full share point since 2014. This is the brand's first "three-peat" since 1990.
- > IHS Markit recognized GM for the highest overall customer loyalty for the third consecutive year.
- > Buick introduced its new Avenir premium luxury brand for both Enclave and LaCrosse models, giving customers unique styling cues, an extensive set of standard features and exclusive premium materials.
- > In March of 2018, GMC debuted the all-new Sierra full-size pickup. The truck will arrive at showrooms later this year, bringing a new standard to premium pickups.

The growing popularity of trucks and SUVs in the Middle East contributed to a strong sales performance in that region as well. GMC sales in MEO were up by 26 percent at the end of 2017 versus 2016, with Sierra, Terrain, Yukon and Yukon XL sales all showing solid momentum. That trend should continue with the arrival of the new 2018 Cadillac Escalade and Cadillac XT5 into the region.



2018 Chevrolet Volt. (top)

Team GM Cares offered hands-on assistance after the 2017 hurricanes in Texas and Puerto Rico. (bottom)

Looking ahead, we know that the pace of change will continue to accelerate. GMNA and GM-MEO are preparing for a winning future by putting the customer first, giving them the transportation choices they want while reducing the environmental impact of our vehicles and facilities.

For example, GM remains the leader in electrification and autonomous driving—technologies that lead to a more sustainable future. Chevrolet Bolt EV and Volt are the sales leaders in affordable, long-range EVs, with more than 43,000 models delivered in 2017.

And the advanced driver assistance system features found in vehicles like Super Cruise in Cadillac CT6, as well as safety features in our other vehicles across the GM product lineup, are all part of our mission to attain zero crashes, zero emissions and zero congestion.

Here are several more examples of the progress we are making in sustainability and community support:

- > For the third straight year, GM ranks on the Dow Jones Sustainability Index for automotive leadership. DJSI is the leading global benchmark for corporate sustainability, and we remain the only automaker on the North American index.
- > As part of an ongoing commitment to operate with clean energy, General Motors is buying a total of 200 megawatts of wind energy from Ohio and Illinois wind farms. Once the turbines come online by the end of 2018, renewable energy will power 20 percent of GM's global electricity use.
- > All of Ohio and Indiana's GM manufacturing facilities will meet their electricity needs with 100 percent renewable energy by the end of 2018.

- > GM has expanded our industry-leading landfill-free program. All of the company's manufacturing plants in Canada and Mexico now recycle, reuse or convert to energy all waste from daily operations. With the addition of 27 newly certified facilities, General Motors has 142 manufacturing and nonmanufacturing landfill-free facilities globally—more than any other automaker.
- > After the recent devastating hurricanes in Texas and Puerto Rico, GM employees and our team GM Cares initiative mobilized to help the affected communities with donations of critical supplies and hands-on assistance to rebuild homes and businesses.
- > GM continues to be the No. 1 automotive user of solar energy in the U.S., according to a report by the Solar Energy Industries Association.
- > GM received the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® Partner of the Year—Sustained Excellence award for the seventh year for its continuous leadership in protecting the environment through energy efficiency. The award is the highest honor an organization can receive from the EPA for energy management.
- > Our efforts are definitely global—and tailored to each region locally. For example, at the Future Mobility Conference in Dubai late last year, GM reviewed plans for developing and introducing smart, clean and connected transportation in the Middle East. We support the vision of His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, for 25 percent of all trips to be smart and driverless by the year 2030.

At GMNA and GM-MEO, we continue to focus on sustainability in every aspect of our business to drive efficiencies, fight climate change, nurture our environment and save money. And we will seek out even more innovative ways to operate a sustainable, caring business of which our customers, employees, partners and communities can be proud.

Alan Batey  
President, GM North America  
Head of GM Africa & Middle East Operations





## REGIONAL MESSAGE

# GM INTERNATIONAL

The global automotive industry is undergoing its most significant change in decades, and the pace of change is extraordinary in our International regions as we support GM's global strategy to define the future of personal mobility.

*Barry Engle, Executive Vice President and President, GM International*

In 2017, in the face of this change and to help optimize our global market presence, GM combined its South America and the Asia Pacific businesses to form the new GM International. With this new structure, our resources are now being focused on driving profitability, strengthening our business performance and capitalizing on growth opportunities for the long term.

GMI markets launched over 30 new products in 2017, continuing a strong focus on trucks and SUVs as a common thread across our markets and the Chevrolet and Holden brands in particular.

These world-class products received an enthusiastic response, helping to generate sales of 1,353,004 vehicles in GMI for the year.

In South America, Chevrolet was the market leader for the 17th consecutive year, and the Onix was the best-selling car.

GM believes in giving back through corporate social responsibility to strengthen our brands. We are helping to create safer, smarter, healthier and more sustainable communities.

Across our markets, we continue to roll out new technologies to help keep our customers safe and connected, from the MyLink infotainment system; to the introduction of OnStar onboard telematics system in selected markets; and active and passive

safety features; as well as being the first automaker globally to introduce vehicles that support Apple CarPlay and Android Auto for a fully connected experience.

We deliver our Sustainability Award Program in South America and the Grandmasters in Asia Pacific to honor our top dealers for giving our customers the best possible buying and ownership experience.

In Argentina and Brazil, programs such as Mini City and Drives of the Future are training children and their parents about traffic rules and the correct use of safety equipment. Similarly, the Road Commitment on the Move program helps middle school students become more responsible road users.

Chevrolet works with partners as well, including Safe Kids in Indonesia and Korea, to promote safety. In Vietnam, the Protect Your Precious program with the AIP Foundation leverages media nationwide to share the safety message.

Our markets are also promoting science, technology, engineering and mathematics (STEM) education, with projects such as the Robotics Program in Mercosur and the 13-year Korea Auto Science Camp.

Our teams in Vietnam, Thailand, Uzbekistan and other markets regularly donate vehicles and powertrains for training purposes, and the Life Project in Columbia provides technical training for automotive-related careers.



*UNICEF Career for Education in Bosques de Palermo, Argentina.*

## 500

vehicles donated by  
the GM Korea Employee  
Foundation



To help our neighbors in need, the GM Korea Employee Foundation has donated more than 500 vehicles to social welfare organizations since 2005. In 2017, Holden celebrated 15 years of the Leukaemia Foundation Patient Transport Program.

Promoting greater physical activity and health, Holden's Home Ground Advantage in Australia has made a 10-year commitment to help local sporting clubs grow through donations and grants. Throughout Asia Pacific, GM is leveraging our partnership with Manchester United to bring the power of play to more children.

A partnership with UNICEF in Argentina is enabling hundreds of young people to finish middle school using new technologies, and our support of the Sankalp School in India is giving underprivileged children the chance for an education.

GM and our teams are also supporting sustainable development and the protection of the environment—from vital mangroves and elephants in Thailand, to the endangered Chinnappanahalli Lake in India.

Within our own organization, we are supporting greater diversity across our many markets, because it makes sense for our people and our business. Diversity boosts creativity and motivates and engages our people. Two great examples are Thailand, where women account for 37 percent of our leadership team, and Brazil, where women lead 17 percent of our core operations.

GM International is a new region with a new mission and a new opportunity. We will continue to support sustainable development and corporate social responsibility as we focus on becoming a leader in our markets by earning customers for life.

Barry Engle  
Executive Vice President and President  
GM International



## REGIONAL MESSAGE

# GM CHINA

Over the past two decades, China has been one of the automotive industry's great success stories. The bicycle kingdom has been transformed into a country where four-wheel transportation has become affordable for people nationwide. General Motors has been a driving force in making it happen.

*Matt Tsien, GM Executive Vice President and President, GM China*

In 2012, China became GM's largest market for retail sales. A half decade later, GM once again set a record in China with deliveries of over 4 million vehicles for the first time. China ended the year as the number one market for the Buick and Cadillac brands, and second-largest market for Chevrolet. We benefited from the launch of 18 new and refreshed models across our brands and market segments in 2017.

GM is on a global mission to zero crashes, zero emissions and zero congestion. Nowhere is this more important than in China, where demand for passenger vehicles remains on the upswing.

GM is working closely with our partners to bring our electrification solutions and advanced technologies to market. We are in the process of rolling out more than 10 new energy vehicles through 2020 in China. Two of those products, the Buick VELITE 5 extended-range electric vehicle and Baojun E100 electric vehicle, debuted in 2017.



*Buick VELITE 5 extended-range electric vehicle.*

Our company has also taken the lead in exploring connected vehicle opportunities. In 2017, we demonstrated GM's Vehicle-to-Infrastructure capability on public roads in Shanghai for the first time. In addition, the first standard designed for the connected vehicle application layer in China, developed by a working group with GM's active participation, was officially released.

Despite the industry's ongoing change, one thing has not changed: GM's commitment to our communities, team members and stakeholders. This supports our vision to be the most valued automotive company in China. We have found that we can do well by doing good.

Five of GM's most energy-efficient manufacturing facilities in 2017 were in China, and GM and our joint ventures ended the year with seven landfill-free facilities in China. In addition, 11 buildings operated by GM and our joint ventures received Leadership in Energy and Environmental Design (LEED) certification for reducing their environmental impact, and four facilities received Wildlife Habitat Council certification for creating wildlife habitats and enhancing biodiversity.

GM is actively engaged in a range of corporate social responsibility projects across China. We are focused on education, environmental protection and safety.

In the area of education, we continued our support of the Village Kindergarten project in 2017. In the space of two years, GM employees have volunteered their time to teach more than 500 children in rural Qinghai.





*Matt Tsien planting trees for World Environment Day.*

In the area of environmental protection, more than 100 employees helped celebrate 2017 World Environment Day by planting trees, installing birdhouses and releasing turtles at the GM Campus in Shanghai, while over 60 employees visited residents living near the Shanghai Chongming Dongtan National Nature Reserve to teach them about the importance of protecting migratory birds.

And in the area of safety, GM China's Safe Kids Safe Ride program with Safe Kids Worldwide (China) marked its fourth year. A highlight was the Safe Kids Safe Ride Car Seat Installation Workshop for parents at a Chevrolet dealership in Shanghai.

GM China has also gotten its suppliers involved. In 2016 and 2017, a total of 24 local suppliers participated in the Green Supply Chain project. They received professional training and support to reduce their energy consumption and increase their recycling of materials.

Our work has not gone unnoticed. GM China received the China Social Responsibility Award at the 2017 China Corporate Social Responsibility Annual Forum, the Sustainability Influence Award at the Heading Toward 2040: Corporate Innovation and Urban Sustainability Shanghai Summit 2017, and the 2017 AmCham Shanghai Corporate Social Responsibility Award.

We are equally proud to have received Top Employer certification from the Top Employers Institute for three consecutive years for nurturing and developing our GM China employees.

GM believes in a cleaner, greener, safer and less congested future in China. We also believe in being a leader in all areas of our business, from the way we treat our environment to the way we treat our employees. We are proud to be working with our partners and the rest of our company to make it happen.

Matt Tsien  
GM Executive Vice President and President,  
GM China



## Laying the Groundwork for Transformation



A CONVERSATION WITH DAVID TULAUSKAS,  
DIRECTOR OF GLOBAL SUSTAINABILITY



**Q** There's been a lot of discussion in recent months about the role of business in society. How is this discussion influencing GM's strategic direction?

**A** Businesses are expected to be leaders and, for the most part, are stepping up their game to provide more products and services that help solve global environmental and social challenges. But in our very connected, complex world, it's really tough for any one business to go at it alone. Collaboration is key. Unfortunately, the progress that comes from working together is frequently hindered by a lack of trust and skepticism. If businesses are truly going to redefine their role in society, then it's critical that they be more open—listening to all stakeholders and increasing transparency. At GM, we're striving to take that approach.

**Q** What societal challenges is GM trying to solve?

**A** We're working toward a future with zero crashes to address the injuries and deaths that occur in and around vehicles; a future with zero emissions to address climate change; and a future with zero congestion to relieve the huge traffic burden that communities around the world face. That vision is about trying to use global challenges to drive innovation that will maximize our business potential and value. We recognize that in order for GM to thrive, then the communities in which we operate must thrive.

**Q** Have you set a timeframe for accomplishing any of these goals?

**A** Not yet. We believe there are three ingredients necessary to make our aspirations a reality: innovative products, consumer acceptance and policy incentives to help bridge the gap between the two. GM can control the products, and we are doing so through a growing fleet of autonomous, electric, connected and shared vehicles. Policy and consumer acceptance are not in our control and underscore the earlier point about collaboration and depend on regulations and consumer trends in the markets where we operate. With so many unknowns, we don't believe it's realistic to set completion dates at this time.

**Q** GM is helping transform markets—and has an opportunity to transform from within by setting an emissions reduction target that will help keep global warming below 2 degrees Celsius. What progress has GM made on setting a science-based target (SBT)?

**A** We're getting started on what we know will be a long journey. GM has partnered with the World Wildlife Fund and Ecofys, a consultancy that provided us with a model that we can use to develop a set of SBTs. The model is based on the Science-Based Targets Initiative (SBTI) requirements, and we have been sharing what we learn with SBTI as we go. In the process of developing that model, we're also building capabilities that will allow us to use the model in-house. We also recently joined SBTI's transportation working group, which will allow us to further learn from our peers.

# SUSTAINABILITY ROAD MAP

**Q** What is GM's timeline for committing to an SBT?

**A** We remain focused on our goal of a zero-emissions future. While getting to zero is certainly aligned with science, SBTi requires an end date for completion. As we worked through this process, we realized that if we are to truly internalize the outcomes we want to achieve and unlock competitive business opportunities, we need to take our time to get it right. SBTs are far too complex to be a check-the-box sustainability project. Just as with our zero-emissions goal, we know an SBT depends not only on our own actions but also on policy and market acceptance.

**Q** What are other roadblocks along the way?

**A** As part of SBTi's transportation working group, we have been involved in discussions around measuring Scope 3 emissions from wells-to-wheels or tank-to-wheels. Considering emissions that are outside our control and being accountable for them from wells-to-tank poses another challenge in our SBT discussions. On the other hand, given our work on energy efficiency and our road map for renewable energy use, our Scope 1 and 2 emissions are much more in our control and more easily aligned with SBTs.

**Q** Waste reduction and landfill-free initiatives have been among GM's most significant areas of achievement. Where do you go next in waste management?

**A** While our plants have made tremendous progress, those manufacturing facilities represent only one phase of the product life cycle. We need to move toward a more systems-based approach that goes beyond the GM enterprise to take into consideration the materials used in our vehicles. That process begins with vehicle design and extends through end-of-life. It requires engagement with suppliers through every tier of the supply chain and the communities in which we operate—all with the objective of finding uses for our products that require minimal additional processing and that contribute to a more circular economy.

**Q** What other areas could benefit from a more systems-based approach?

**A** Just as GM views waste as a resource out of place, it's time to apply that same philosophy to carbon. We've been thinking about carbon all wrong. We think of it as something bad, something to reduce or eliminate altogether. That perspective limits our ability to innovate. Carbon is a key building block to everything, a key resource that we can't live without. The problem is that in the process of using it, we're not putting it back where it came from, and we're not constructing things with it as nature does. Ultimately, we want to use carbon in ways consistent with the natural cycle, in balance so that it doesn't overwhelm systems.

The goal of a more circular economy is to close the loop and keep materials in use. The same thinking goes for carbon. Let's use systems thinking, upfront design and resource efficiency to put the molecules where they can provide the most benefit. If we only talk about reducing our carbon footprint, we are only having half the conversation. Carbon can serve as an asset we can use productively.

**Q** As you publish this report, what is GM's perspective on the current proliferation of reporting frameworks?

**A** We're engaging with a variety of stakeholders to really understand what the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD) and Sustainability Accounting Standards Board (SASB) mean for the automotive industry. As an example, TCFD calls for discussion of climate scenario. We're involved in discussions to define what that actually requires, given the nature of our business, and how global trends factor into our long-range planning. Similarly, we're trying to make sure that disclosures outlined by SASB are material to our business. We remain committed to reporting that is transparent and that discloses information relevant and important to our stakeholders.



2018 Chevrolet Volt.

## How GM Moves Forward, Sustainably

General Motors' sustainability strategy is synonymous with its business strategy. Our vision for personal mobility is a world with zero crashes, zero emissions and zero congestion. By delivering safer, simpler and sustainable transportation solutions for our customers, we'll realize that vision. In the process, GM will become the most valued automotive company.

Our strategy reflects the transportation revolution underway today, and that is transforming how people move—an effect similar to the debut of the automobile more than a century ago. The vehicles leading this transformation are autonomous, electric, connected and shared. Throughout the company, we are focused on initiatives that capitalize on these new technologies and business models to create products, offer services and advocate for policy that looks at transportation as a system and mobility as a service. This will result in a world where sustainable transportation is a reality for daily life and enables communities to grow more prosperous and livable.

### *Helping to Solve Climate Change*

An inherent part of our business strategy is helping to address climate change, and the related risks. We have an unwavering commitment to an all-electric, zero-emissions future, regardless of any modifications to future fuel economy standards. Today, we are investing in multiple technologies that offer increasing levels of vehicle electrification. This is part of our long-term strategy to reduce petroleum consumption and

greenhouse gas emissions. Our zero-emissions vision extends beyond products to our manufacturing operations, where we have committed to use 100 percent renewable energy by 2050.

Our efforts to help solve climate change cannot depend on innovation alone. To accelerate a zero-emissions future, consumer acceptance of electric vehicles must increase faster and be supported by a cleaner electric grid. We support policies and legislation that provide various incentives to help make electric vehicles more desirable and affordable. We also seek partnerships with energy suppliers to build robust charging infrastructure and improve the percentage of renewable power sources in the grid to maximize the value of electric vehicles.

GM's commitment to climate change solutions extends to advocacy. We are the only automaker signatory to date of the Climate Declaration, which asserts that there is economic opportunity in addressing climate change. The declaration is an initiative of Ceres' Business for Innovative Climate & Energy Policy (BICEP) and calls for policymakers to address climate change by promoting clean energy, boosting efficiency and limiting carbon emissions. GM also was one of the initial 13 companies to sign the American Business Act on Climate Pledge, calling for a strong outcome in advance of the Paris climate conference, COP21. Companies who signed the act also pledged to reduce emissions, increase low-carbon

# SUSTAINABILITY STRATEGY

investments, deploy more clean energy and build more sustainable businesses.

## Strategy Integration

We integrate sustainability into our business through GM's five corporate strategic priorities, using business levers such as technology, corporate governance and operational excellence, as shown in the graphic below. This process creates positive

benefits for our stakeholders, drives long-term success for GM and enables each employee at every level of our company to help build value for the customer. Our work is grounded in our values, with the customer as our compass to guide decisions, with strong and transparent stakeholder relationships, and with excellence as our standard.



Material impacts that we report

Internal levers to embed sustainability in our business

Strategic business priorities to drive growth and efficiencies

*Note: The use of "material" or "materiality" in this report is not related to or intended to convey matters or facts that could be deemed "material" to a reasonable investor as referred to under U.S. securities laws or similar requirements of other jurisdictions.*





2018 Buick Enclave.

## Collaborating to Move Humanity Forward

Our success depends on relationships inside and outside the company. This core value drives engagement with our stakeholders, who we have identified as customers, both individual and fleet; investors and analysts; employees, both current and potential new talent; suppliers, Tier I and beyond; dealers and dealer councils; communities in which we operate; governments at the national, state/provincial and local levels; and environmental and social nongovernmental organizations (NGOs).

We engage these stakeholders in a variety of ways, all with the goal of sharing information and informing business decisions with meaningful dialogue. Brand marketing, investor relations, global purchasing, human resources, labor relations and government relations are some of the GM functions that engage stakeholders on a regular basis to understand and address concerns, as well as to advance social and environmental goals. Forms of engagement include, but are not limited to, quantitative consumer research studies, stakeholder focus groups, congressional testimony, blog posts and community meetings.

During 2017, we continued to see increased interest in environmental, social and governance (ESG) performance among investors, and the number of meetings on ESG issues with investors continues to increase.

### *External Stakeholder Advisory Group*

A critical part of our strategy is regular engagement with an external sustainability stakeholder advisory group that is coordinated through Ceres, a nonprofit organization advocating for corporate sustainability leadership. This group, now in its eighth year, has become a benchmark example of constructive stakeholder engagement. Members, who include NGOs, socially conscious investors, peer companies, fleet customers and suppliers, help guide our strategy and priorities, as well as providing informed feedback about opportunities and challenges. In addition, each member of this group possesses unique qualifications and backgrounds that we call upon for counsel on specific issues, such as supply chain transparency, human rights or policy transparency.

The group generally meets twice each year, and a shorter meeting is held during the annual Ceres conference. In-person meetings are usually held at a GM facility. During a 2017 meeting by conference call, the group heard from GM Global Procurement leadership on supply chain strategy and discussed supply chain issues, especially human rights impact and raw material sourcing, such as natural rubber and cobalt. The group also engaged in a discussion of GM's zero-emissions vision with respect to fuel economy regulation and other climate-related issues.

# STAKEHOLDER ENGAGEMENT

## Strategic Relationships

Our regular engagement with Ceres and other stakeholders demonstrates the effectiveness of our strategy to work with the most impactful organizations and pursue more meaningful partnerships around sustainability issues that are critical to our business. Throughout this report, we document many of these relationships in the following areas:



**ISSUE:**  
Climate Change  
**SUSTAINABILITY STRATEGY**  
Page 20

**ISSUE:**  
Electric Vehicle Infrastructure



**PRODUCTS:**  
Page 54

**ISSUE:**  
Electric Vehicle Consumer Marketing



**PRODUCTS:**  
Page 63



**ISSUE:**  
Autonomous Vehicle Public Policy

**PRODUCTS:**  
Page 61



**ISSUE:**  
Supplier Relationships

**SUPPLY CHAIN:**  
Page 93



**ISSUE:**  
Renewable Energy

**OPERATIONS:**  
Page 132



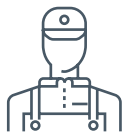
**ISSUE:**  
Cobalt and Conflict Mineral Sourcing

**SUPPLY CHAIN:**  
Page 96



**ISSUE:**  
Supply Chain Social Responsibility

**SUPPLY CHAIN:**  
Page 86



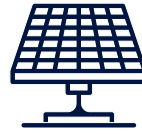
**ISSUE:**  
Forced Labor in the Supply Chain

**SUPPLY CHAIN:**  
Page 91



**ISSUE:**  
Sustainable Natural Rubber

**SUPPLY CHAIN:**  
Page 92



**ISSUE:**  
Manufacturing Energy Efficiency

**OPERATIONS:**  
Page 139



**ISSUE:**  
Biodiversity

**OPERATIONS:**  
Page 137



**ISSUE:**  
Circular Economy

**OPERATIONS:**  
Page 135



**ISSUE:**  
Dealer Excellence

**CUSTOMERS:**  
Page 32



**ISSUE:**  
Ocean Plastic Pollution

**OPERATIONS:**  
Page 135



**ISSUE:**  
STEM Education

**COMMUNITY:**  
Page 144



**ISSUE:**  
Economic Empowerment

**COMMUNITY:**  
Page 27



**ISSUE:**  
Vehicle & Road Safety

**SAFETY:**  
Page 40



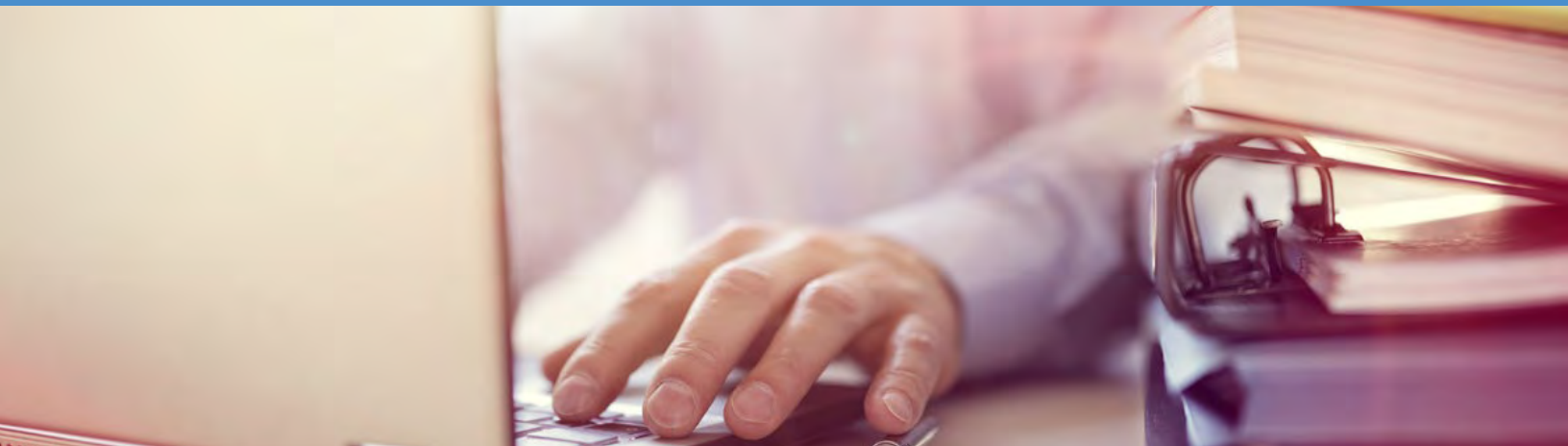
**ISSUE:**  
Sustainable Communities

**COMMUNITY:**  
Page 144



**ISSUE:**  
Distracted Driving

**SAFETY:**  
Page 51



## A Strong Commitment to Transparency

GM is committed to publicly reporting our progress on an annual basis, discussing the opportunities and challenges that we encounter as we work to enhance our performance and conduct our business in the most responsible manner possible. The reporting process not only helps us to manage and measure our progress, but also helps us to engage with both internal and external stakeholders around the world.

### *Sustainability Reporting*

Our previous report covered calendar year 2016 and was published in May 2017. The editorial content of this report, the 2017 Sustainability Report, generally covers subject matter for calendar year 2017 and some of 2018 and is limited to operations owned and/or operated by GM. In some instances, data has been included for operations in which GM's interest is through a joint venture. Such data is noted in this report. All metrics related to GM manufacturing and product commitments, as well as workforce and financial data, refer to the calendar year ended Dec. 31, 2017. On July 31, 2017 we closed the sale of the Opel and Vauxhall businesses and certain other assets in Europe to Peugeot, S.A. (PSA Group). On Oct. 31, 2017 we closed the sale of the European financing subsidiaries and branches to Banque PSA Finance S.A. and BNP Paribas Personal Finance S.A. The European Business was previously reported as our GM Europe (GME) segment and part of GM Financial. The European Business is presented as discontinued operations in our consolidated financial statements for all periods presented. The assets and liabilities of the European Business are presented as held for sale in our consolidated financial statements as of Dec. 31, 2016. Upon our divestiture of Opel and Vauxhall, GM used the *GHG Protocol Corporate Accounting and Reporting Standard*, published by WBCSD and WRI as a basis

for our methodology for publicly reporting GHG. Unless otherwise indicated, information in this report relates to our continuing operations.

This report has been prepared in accordance with the GRI Standards: Comprehensive Option.

### *Assurance*

For 2017, Stantec conducted an independent review for limited assurance on waste, water, carbon and energy data for global facilities. See page 177 for Stantec's full statement of assurance. Due to limited assurance on most material data streams within the report, this review only involves operational management. Neither the GM Board of Directors nor senior management is involved in seeking assurance for the report.

### *Materiality Survey*

Our sustainability strategy and the content of this report are based on the results of a 2016 global materiality assessment, a process we undertake every two years. The use of "material" or "materiality" in this report is not related to or intended to convey matters or facts that could be deemed "material" to a reasonable investor as referred to under U.S. securities laws or similar requirements of other jurisdictions.

A third party, Sustainalytics, conducted the assessment based on a process outlined in the Global Reporting Initiative's (GRI) Technical Protocol:

**Identify:** Relevant sustainability topics covered in previous materiality assessments, as well as key industry reports, were reviewed to finalize a list of 16 environmental, social and governance topics and subtopics.

# REPORTING PRACTICES

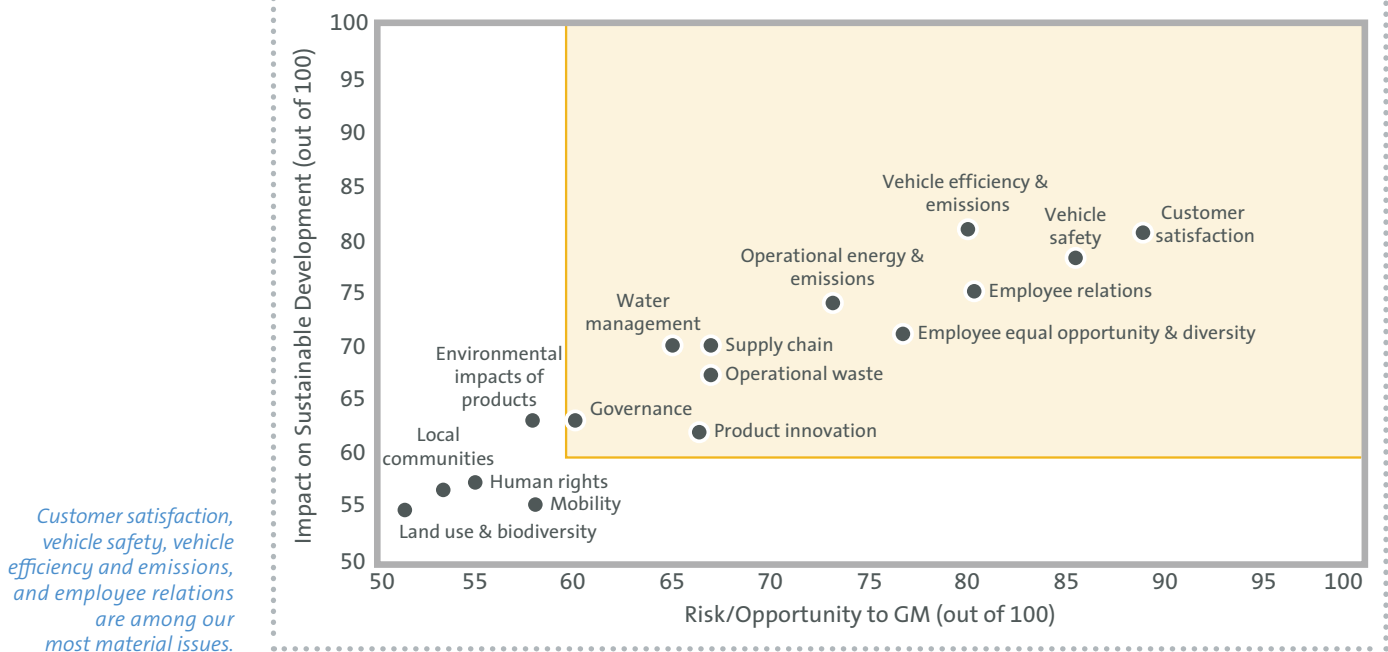
**Prioritize:** Two online surveys were deployed to GM employees and external stakeholders globally. Respondents were asked to prioritize the importance of sustainability topics and subtopics. The survey was completed by 1,052 GM employees, who were asked to what degree the management of an issue impacted GM's long-term success, and 367 external stakeholders, who ranked the importance of GM's management of a given issue.

**Validate:** Based on the survey results, all 16 topics were plotted on a preliminary materiality matrix, which was reviewed by a Sustainalytics automotive sector analyst in order to validate the relative importance of each topic. Based on this review, the relative importance of six topics was increased or decreased and a final matrix was determined.

Among the key learnings from this most recent materiality assessment: Our top three most material topics—customer satisfaction, vehicle safety and vehicle efficiency and emissions—remained consistent between 2014 and 2016 and are closely linked. Five of the top 10 most material topics rose in importance over the past three materiality analysis cycles: customer satisfaction, vehicle safety, employee relations, employee equal opportunity and diversity, and water management.

In addition, Sustainalytics identified collaboration with suppliers on social and environmental supply chain challenges, vehicle efficiency and emissions, and operational energy and emissions as leadership opportunities relative to other automotive OEMs.

## Materiality Matrix





## *Additional Disclosure*

*In addition to publishing our annual Sustainability Report, GM aligns its reporting with several other leading frameworks and disclosure organizations.*

## **CDP Reporting**

GM has worked with CDP since 2010, when we began tracking carbon emissions and reduction activities through the CDP Climate Change Program. Since 2013, we have reported all 15 categories of Scope 3 emissions. In 2017, GM was named to the CDP Water and CDP Supply Chain A lists. Though GM has been named to the CDP Climate A List as recently as 2016, we did not make the 2017 A list due to reputational risks related to charges of alleged misreporting diesel emissions for certain models in the U.S., which GM strongly disputes. These claims are baseless and we will vigorously defend ourselves.



In addition to the climate change program, we have voluntarily participated in the CDP Water program since 2011. In 2017, we sponsored CDP's World Water Day report, offering solutions to wastewater reuse, and were a gold sponsor of CDP's Water & Forests Workshop.



We also participate in the CDP Supply Chain program, engaging our supply chain for the past four years in actions to reduce their emissions, mitigate their effects on climate change and strengthen their overall businesses. We asked about 200 of our suppliers to disclose their energy use and carbon emission data to CDP and offered resources to help. The 70 percent of invited companies that responded reduced carbon emissions in total by 90 million metric tons, saving a cumulative \$23 billion of which 8 million metric tons and \$1.2 billion was attributed to their business with GM. These efforts earned GM a spot on CDP's Supplier Climate A List. Only 3 percent of the thousands of companies who report to CDP achieved the ranking.

Read more about the results of our CDP supplier survey in the "Supply Chain" section of this report. We continue to use the information gained from this program to more accurately measure our indirect greenhouse gas emissions and water impact and prioritize our climate change risk management within the GM supply chain.

## **United Nations Global Compact and UN Sustainable Development Goals**

GM supports both of these initiatives and includes indexes for them in this report. During 2018, we are refreshing our materiality assessment and intend to use this exercise to focus on the UN Sustainable Development Goals that align most closely with our greatest impacts.

## **Sustainability Accounting Standards Board**

Our 2017 report marks the first time that GM has reported to the Sustainability Accounting Standards Board framework. Currently, we do not track all metrics included in the Transportation Standards but look forward to including more data in the future.

## **Task Force on Climate-related Financial Disclosure**

The Financial Stability Board Task Force on Climate-related Financial Disclosure (TCFD) has developed a voluntary, consistent climate-related financial risk disclosure for use by companies in providing information to investors, lenders, insurers and other stakeholders. The TCFD framework rests on four main tenets. The table on page 173 provides sections of this report that address those tenets.



# CUSTOMERS

ASPIRATION: EARN CUSTOMERS FOR LIFE

WHAT WE ASPIRE TO: EARN CUSTOMERS FOR LIFE .....	27
OUR MANAGEMENT APPROACH TO CUSTOMERS .....	28
WHAT WE MEASURE .....	31
ACTIONS WE ARE TAKING	
Recognize Dealer Excellence .....	32
Serve Customers Quicker .....	32
Provide Fleet Solutions .....	33
Strive for Zero Defects .....	34
Build Quality Throughout Our Operations .....	35
Enlist Students to Accelerate Innovation .....	36
Go Above and Beyond for Customers .....	37
Enroll, Earn, Enjoy—My GM Rewards .....	37



## CUSTOMERS: ASPIRE

### WHAT WE ASPIRE TO:

#### EARN CUSTOMERS FOR LIFE

Our stakeholders continue to identify customer satisfaction as General Motors' most material issue. This aligns completely with our purpose to earn customers for life, and customer satisfaction ensures the long-term sustainability of our business in a highly competitive marketplace. Research has shown that companies that lead in customer experience generally enjoy a higher stock valuation than those that lag in customer experience. When you consider that a single percentage point improvement in U.S. customer retention is equivalent to selling about 25,000 vehicles, or approximately \$700 million in annual revenue, depending on the mix of vehicles involved, the business benefits are compelling.

# OUR MANAGEMENT APPROACH TO

## CUSTOMERS



Customer satisfaction speaks to what we believe as a company. Customers trust GM brands, operations and dealers around the world to provide them with quality products that will help them keep their families safe. We understand that this trust is easy to lose and difficult to regain. Today, we believe we are more focused on this responsibility than at any other time in our history. The goal is to satisfy our customers to a level where they are not only loyal to our brands and products, but also recommend them to others.

Everything we do across the enterprise is about aspiring to deliver the highest possible levels of product quality. Our brands, products and services aim at achieving benchmarks in studies measuring quality and consumer satisfaction. Accordingly, our focus on product quality aligns the entire company with the goal of exceeding customer expectations and providing customers with the best overall experience.

### KEY TAKEAWAYS

- > Satisfying our customers is at the center of everything we do at GM. Customer feedback informs our product development process, as well as shaping how we interact and engage with customers throughout the life of the product.
- > We are committed to building a defect free culture through three interdependent, enterprise-wide elements: Product Safety, Systems Engineering and Quality Chain.
- > We are focused on pursuing the highest possible levels of product quality by cultivating a culture of excellence and holding our operations to rigorous internal and external standards.
- > To help our dealers meet quality and customer satisfaction standards, we provide them with both technical and nontechnical training, and audit them periodically.
- > We evaluate customer satisfaction on an ongoing basis through our Customer Assistance Center and by gathering Net Promoter Scores, which indicate how likely a customer is to recommend our products.

*Cadillac takes first coast-to-coast drive with Super Cruise™ hands-free technology.*

### Vehicle Development Process

This total focus on the customer defines how we develop, engineer and manufacture our vehicles with quality and durability goals in mind, starting with the vehicle development process. We harness customer feedback from global markets to help shape our customers' product experience, using our GM Compass customer survey to gather preferences on a variety of issues—from performance and efficiency to how people interact with their vehicles. We also are continually refining our vehicle development processes to help deliver products our customers want that meet their expectations for quality, safety and performance. The latest version of our Global Vehicle Development Process was released in 2016 and included additional explicit steps to improve safety and quality assurance.

### Building a Defect Free Culture

The Global Vehicle Development Process is rooted in a cultural commitment that strives to produce defect-free vehicles. Building upon GM's foundational "Who We Are" and "How We Behave" foundational statements, employees in this area are committed to a goal of delivering defect-free vehicles as a value supported by key initiatives and behaviors. This commitment is supported by three elements:

- > **Product Safety**, which in recent years has been enhanced through several organizational changes, including the formation of a global product integrity organization, the restructuring of our global vehicle safety and safety field investigation process, and the implementation of our Speak Up For Safety program, Prevent Repeat Defect process and Safety Incident Protocol.





## CUSTOMERS: MANAGE



*Watch Mary Barra speak about the importance of customers.*

- > **Systems Engineering**, which is being applied to our processes through a new organization that defines functional content, assigns function ownership and uses a new IT-based system to help map, flow and trace requirements across our complex systems network.
- > **Quality Chain**, which is an interconnected system of tools and methods that illustrates required collaboration and drives visibility into how design, systems and process failure modes can be mitigated. This helps drive enterprise-wide engagement so all issues can be corrected across all systems and processes.

Each element is interdependent, enterprise-wide and designed to be sustained over the long term to facilitate the learning, practice and perfecting that are required to achieve a defect free culture.

### *Quality Assurance*

All manufacturing operations that require ISO 9000 certification—a set of international standards on quality management and quality assurance—are certified. Globally, we are currently transitioning to the new ISO 9001:2015 standard, which is aligned with the most recent trends. Currently, 44 operations have completed the transition, and we expect that all will be certified to this new standard by September 2018. Our powertrain, stamping and component operations are held to an even higher standard, ISO/IATF 16949. 18 facilities are certified to this level. We also have an internal quality standard, the Global Manufacturing System (GMS), that is even more rigorous than external standards. And initiatives such as improving supplier launches and GMS are a key part of our strategy.

Initial quality has evolved as a measure of issues that customers may experience with their vehicles in the first months of ownership. In recent years, user-friendly infotainment systems, seat comfort, knob and handle placement and other features have replaced component failures as top quality issues. The key metric for GM to measure initial quality is 12 Months in Service Incidents Per Thousand Vehicles (12 MIS IPTV). Initiatives such as improving supplier launches and GMS are a key part of our strategy.

It's also important to understand that quality today goes beyond reliability to encompass often intangible experiences. This is why we are taking more scientific approaches to translate customer input and feedback into technical requirements that define the overall driving experience. Consider, for example, the sound of an engine start or transmission shift; the feel of buttons when pushed; or the sound doors make when closing. Such quality attributes often can be difficult for customers to describe and quantify. New advanced tools and approaches, such as Human Vehicle Integration, help to translate customers' requirements into technical specifications and, ultimately, vehicle designs.

The implementation of updated tools and programs is helping GM employees around the world react better and faster to the needs of our customers. For example, our Global Product Development organization has completed the highest level of Design for Six Sigma training, a process that focuses on customer issues and solutions. We also have migrated all of our plants around the world to the highest GMS levels with the goal of shipping defect-free products. Operational Excellence has been implemented across the enterprise as a proven, system-wide and data-driven approach to confronting business issues and identifying lasting solutions.



The goal of these and other programs is to take action as early as possible in the vehicle development and manufacturing process to promote excellence at product launch. This “quality across the enterprise” approach drives behaviors and actions throughout the company to result in brands, products and services that meet or exceed the expectations of our customers.

### *Dealer Quality Programs*

Our commitment to quality and customer satisfaction extends to the experience customers have when they visit our dealerships. It is essential that we maintain a consistent level of sales and service excellence to earn and maintain customer trust. Two elements of quality management systems help us achieve this consistency. We use Standards for Excellence (SFE) to measure dealers and Essential Brand Elements (EBE) to update and measure dealerships on the achievement of brand standards relating to the quality and effectiveness of dealers’ interaction with customers. The variable compensation of each dealership depends on the level of achievement under the SFE and EBE programs.

We provide both technical and nontechnical training and tools to dealerships to help them meet or exceed their customers’ expectations. This training includes modules for sales, finance, front office and management staff; apps for sales and service; and various reference documents such as FAQ documents. Different departments in the dealership relating to sales, as well as service, must maintain a certain level of training performance by meeting technical and nontechnical criteria. For example, to be able to self-authorize warranty claims, a dealer must maintain 100 percent training for technicians at all times.

Our GM Internal Audit Staff ensures dealer compliance by auditing all dealerships on a rotating basis. Dealers are required to achieve third-party

Automotive Service Excellence certification of their facilities, an industry standard and a customer-recognized seal of quality. Furthermore, while ISO 9000 certification is not mandatory, many dealers are ISO 9000 certified.

### *Customer Experience*

We recognize that overall customer satisfaction is a function of both quality products and customer interactions to create a distinctive customer experience. This requires having a 360-degree view of our customers that enables us to recognize, understand and serve them best.

We make great efforts to make sure that our customers can share their concerns with us at any time. Our Customer Assistance Center is integrated with our U.S. dealer network, field organization, technical and parts assistance, engineering, product quality teams and OnStar and Roadside teams. Any GM employee or customer can easily report a concern or comment through the Center’s website, email address or phone hotline, where our dedicated team works to quickly incorporate feedback and resolve concerns.

We measure customer satisfaction progress primarily through the Net Promoter Score, which is an important key performance indicator that gauges how likely a customer is to recommend our products. Every customer also receives a dealer assessment, the Customer Satisfaction Index, that asks for feedback on both their sales and service experience at dealerships. In addition to our internal metrics, we monitor third-party measures of customer satisfaction and quality to gauge our progress.

Regardless of whether we are using an internal or external measure of success, we are gratified to see progress, but will be satisfied only when we are exceeding the expectations of each and every GM customer.

# WHAT WE MEASURE

## CUSTOMERS

### J.D. POWER U.S. CUSTOMER SERVICE INDEX — MASS MARKET BRANDS

3

Award-Recognized Brands  
(Buick, GMC, Chevrolet)

### J.D. POWER U.S. APEAL 2017

3

Award-Recognized Models  
(Cadillac Escalade, Chevrolet Bolt EV, Chevrolet Tahoe)

### J.D. POWER U.S. INITIAL QUALITY STUDY

4

Award-Recognized Models  
(Chevrolet Silverado, Chevrolet Silverado HD, Chevrolet Sonic, GMC Terrain)

1

Gold Plant Quality Award-Recognized Plant  
(Fort Wayne Assembly)

### J.D. POWER 2018 U.S. VEHICLE DEPENDABILITY STUDY



#### Buick

Most Dependable Vehicle  
Among Mass-Market Brands

**15 Vehicles\***

in the Top Three in  
Their Segment

#### General Motors

was named the IHS Markit Automaker  
with the highest customer loyalty for  
the third consecutive year.

#### GMC

was named Most Refined Brand by  
Kelley Blue Book's Brand Image Awards  
for the fourth consecutive year.

#### General Motors

was named to Fast Company's Most  
Innovative Companies 2018, the only  
automaker on the list.

\*The 15 vehicles include Buick Enclave, Buick LaCrosse, Buick Regal, Buick Verano, Chevrolet Camaro, Chevrolet Equinox, Chevrolet Impala, Chevrolet Malibu, Chevrolet Silverado, Chevrolet Silverado HD, Chevrolet Sonic, Chevrolet Tahoe, Chevrolet Traverse, Chevrolet Trax and GMC Terrain.





## ACTIONS WE ARE TAKING

### Recognize Dealer Excellence

**4,100**  
dealers are enrolled  
in the Mark of  
Excellence Program



Dealerships are the face of GM to our customers. We depend on dealers to build personal connections, represent our brands and give customers the information they need to choose and properly maintain their vehicles. It's a tall order, which is why GM recognizes dealers who go the distance each year to serve our customers. The Mark of Excellence program annually recognizes high-achieving dealers, sales consultants, sales managers, service managers, service consultants, service technicians and parts teams. Out of GM's approximately 4,300 Chevrolet, Buick, GMC and Cadillac dealerships across the United States, almost 4,100 dealers and more than 35,000 dealership employees are enrolled in the Mark of Excellence Program.

Automobiles Paillé, a GM dealer in Quebec is a good example of GM excellence. When Fernand St.-Pierre, owner of a Chevrolet Silverado HD Duramax Diesel, drove his truck from Quebec to Mexico for vacation,

he encountered a problem on the road—and there were no dealerships nearby that could help. His friends knew Automobiles Paillé as truck experts, and even though St.-Pierre was not a customer, he decided to give them a call. "We made the decision to help this guy, even though we didn't know him," says Jean-Claude Paillé, Dealer Principal. The dealership sent a technical advisor and technician from Canada to Mexico with the parts and tools to repair the vehicle.

"It's the first time I have ever heard of this kind of outreach across borders, and the lengths they went to, getting the customer back on the road," said Steve Carlisle, former President and Managing Director, GM Canada. As a result of these actions, St.-Pierre came back to the dealership and purchased a new truck at Automobiles Paillé—just in time for his next trip.

### Serve Customers Quicker



The Operational Excellence project team at Holden in Australia believes that improvement is always an option. Recognizing that on-time service is a major contributor to customer satisfaction, the team launched a pilot program across its dealer network to improve promised time accuracy for service customers. They recruited five dealers to participate, and identified four simple changes that produced a significant impact. These included implementing a recall checking process, tracking roadblocks, asking customers to sign off on promised delivery times and conducting team huddles at the end of each day.

After six months, the pilot group improved its on-time performance by 8 percent. The OpEx team deployed the improvements that worked for the pilot group across the network during 2017.





## Provide Fleet Solutions

GM Fleet is dedicated to delivering great products, innovative business solutions and an exceptional experience that fleet customers can't get anywhere else. At our first-ever Solutions Summit in Las Vegas, we showed our commitment to delivering on all three.

At the event, more than 1,500 commercial, government and rental customers and dealers got a firsthand look at the latest Chevrolet, Buick, GMC and Cadillac vehicles. Attendees heard from brand leaders and learned how GM vehicles compare to their competitors' in areas that matter most, like fuel efficiency and total cost of ownership.

They also got to experience new GM vehicle technology for themselves at the Las Vegas Motor Speedway. Participants logged nearly 22,000 miles in free and controlled drives, during which they tested active safety features, drove trucks on a dirt track, evaluated towing capabilities, learned how regenerative braking works in electric vehicles and much more. Finally, attendees had ample time to meet with subject matter experts one-on-one about fleet solutions important to them, including connectivity and telematics solutions, GM Financial products and maintenance solutions.

"After years of work with fleet customers, we've homed in on what's at the top of their minds, and we are addressing them head on," said Ed Peper, U.S. Vice President of GM Fleet. "This all-new mega event allows customers and dealers to learn about our solutions in a hands-on, interactive way."

“After years of work with fleet customers, we’ve homed in on what’s at the top of their minds, and we are addressing them head on,” said Ed Peper, U.S. vice president of GM Fleet.



*The Cruise AV is designed to operate on its own, with no driver, steering wheel, pedals or other manual controls.*

## Strive for Zero Defects

We aim to produce defect-free vehicles, which requires a commitment to quality in the design, engineering and building of them. But it is much more than a promise to operate at the highest levels; it is a call for lasting culture change. Our Global Product Development division has translated GM's vision of zero defects into values and behaviors that are meaningful for employees.

These behaviors include a renewed focus on product safety, which we are strengthening with continuous improvement in our Global Product Integrity organization, the Speak Up For Safety system and a restructured safety field investigation process. We are also emphasizing systems engineering companywide. This requires all people to practice the discipline of systems thinking, understanding how their individual roles contribute to the bigger picture rather than thinking in silos. Related to systems thinking is our quality chain construct. GM has quality tools that work as interconnected processes and cross system and organizational boundaries. Using these tools together is helping us build discipline into our process for identifying and addressing failure modes.

These product development-centric elements are foundational to building a defect-free vision. But our efforts wouldn't be complete without the Launch Excellence initiative. Launch Excellence uses an Affinity Diagram to help teams focus on what must be true in terms of process and discipline to successfully navigate vehicle development.

We brought our defect-free vision to life by gathering more than 900 GM engineering leaders for our inaugural Defect Free Day. Participants gained an understanding of how systems engineering, quality chain methodologies and Launch Excellence contribute to GM's defect-free aspirations. They were also challenged to think about how each of their teams can best contribute to this objective and to facilitate discussions with their employees going forward.

Each of these new approaches is interconnected and requires the long-term commitment of everyone at GM. Together, they will allow us to establish defect-free as a foundational cultural value. As vehicles become more connected and complex, where one defective line of code can cause problems throughout a system, transforming our culture in this way is more critical than ever.





## Build Quality Throughout Our Operations

General Motors' Built-In Quality (BIQ) Migration Model is a five-level initiative that aims to build quality into GM's global manufacturing processes and streamline practices across all sites. By working to detect and contain quality issues, each plant strives to reach the ideal Level V state of prevention where errors are not created and there is zero in-process waste.

Although this is not a simple task to achieve, the Brownstown Battery Assembly Plant (BBAP) is now one step closer. It recently became the 14th plant in North America to attain BIQ Level IV status. To earn this distinction, BBAP employees proved that they can ensure defects don't leave their stations, let alone the facility.

"We are so pleased about becoming BIQ Level IV Certified," says Plant Manager Nancy Laubenthal. "It showcases not only the high standard we place on the products that come out of our plant, but also the commitment and dedication that our employees have to their jobs and the customers we serve."



*General Motors Design Release Engineer for the Gen 2 Chevrolet Volt battery pack Mike Aljamal (left) talks with GM Global Battery Systems and Hardware Engineering Director Bill Wallace at the Brownstown Battery Assembly Plant in Brownstown Township, Michigan.*



*A new standard feature on the 2018 Buick Enclave is an air ionizer that eliminates odors and helps improve air quality inside the vehicle. It works by producing negatively charged particles that attract airborne contaminants — such as bacteria, viruses, dust, debris and pollen — and breaks down their structure, helping to clean the cabin air.*





*Blacktop Build Innovation Challenge at MIT.*

## Enlist Students to Accelerate Innovation

Sometimes putting the customer at the center of everything we do requires fresh thinking. That's how we approached Bluetooth connectivity issues—a major frustration for drivers of all vehicle makes and one that accounts for 4 percent of GM vehicle complaints. To find solutions, we hosted our first BlacktopBuild at the Massachusetts Institute of Technology.

BlacktopBuild is an on-campus innovation challenge that provides college students with the opportunity to solve real-life business issues while working alongside GM engineers. The inaugural BlacktopBuild focused on developing test automation strategies centered around Bluetooth connectivity to deliver a seamless customer experience. Students who participated were tasked with finding as many potential issues as possible with GM's infotainment system over the course of three days. When the competition ended, four MIT freshmen landed two-week internships at GM where they had the chance to implement their ideas with guidance from GM engineers in Detroit.



*MIT students work alongside GM engineers to develop Bluetooth test automation strategies during iHub's first-ever BlackTopBuild.*





## Go Above and Beyond for Customers

The customer-centric culture that GM has been building in recent years is often crystalized in an exemplary story. Keith Battle is a GM Aftersales Manager who saw a car stopped on the side of the highway with its hazard lights on. Keith didn't hesitate before calling OnStar from his own vehicle to summon help. He pulled over to ensure that the driver, Josip Dunat, was okay, waited with him until a tow truck arrived and then drove Dunat more than 25 miles home. Once Dunat arrived home safely, he wrote an email to GM CEO Mary Barra, letting her know how Battle had gone far above and beyond to help him. "He is a true advocate for your brand," Dunat wrote. "When you have actions like Keith's, it makes you change your opinion of any brand." Battle won a 2017 Mark of Customer Excellence award for his actions, and Dunat is now a loyal GM customer, with a newly purchased 2017 Chevrolet Malibu and a 2017 Chevrolet Tahoe for his wife.

## Enroll, Earn, Enjoy – My GM Rewards

Earning customers for life requires delivering products that exceed customers' expectations and staying constantly engaged with them. A new program is supporting the latter. My GM Rewards is a nationwide loyalty program that rewards customers with points for eligible purchases at participating GM dealerships. Customers can redeem those points for vouchers to apply toward the eligible transactions, like purchase or lease of a new vehicle, qualifying dealership services, GM accessories, paid connected vehicle services and more. Members will also receive brand-exclusive offers, savings and experiences based on what's most important to them, transforming how customers engage with GM's brands. More than 3,400 dealerships have signed on to the program since its launch in early 2018.

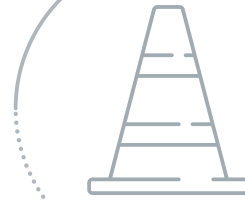




# SAFETY

ASPIRATION: ZERO CRASHES AND ZERO  
WORKPLACE INJURIES

WHAT WE ASPIRE TO: ZERO CRASHES AND ZERO WORKPLACE INJURIES .....	39
OUR MANAGEMENT APPROACH TO SAFETY .....	40
WHAT WE MEASURE .....	43
ACTIONS WE ARE TAKING	
Think Beyond the Vehicle .....	46
Expand Deployment of New Technologies .....	46
Help Teens Hit the Road Safely .....	48
Pioneer V2V Technologies .....	49
Extend Safety to Cyberspace .....	49
Reinforce a Companywide Safety Culture .....	50
Engage With Regulatory Stakeholders .....	50
Design and Test Safe Infotainment Systems .....	51



## SAFETY: ASPIRE

### WHAT WE ASPIRE TO:

#### ZERO CRASHES ZERO WORKPLACE INJURIES

GM's top priority is safety—in the vehicle and in the workplace. The two are inherently linked. More than 1 million people are killed in traffic accidents around the world every year. GM believes that number should be zero. Similarly, we aspire to a workplace with zero injuries among employees, contractors, suppliers and other individuals in our facilities around the world. A world with zero crashes and zero injuries is an ambitious vision. We see, however, the potential for that ambitious vision to become reality by holding each other accountable for our own personal safety and by capitalizing on the promise of smart, connected vehicles that get drivers to their destinations safely, every single time.

# OUR MANAGEMENT APPROACH TO

## SAFETY



Our approach to safety is seamless and comprehensive: The best way to produce safe vehicles, free of defects, is in safe workplaces where employees are accountable for their personal safety and the safety of those around them. Across the company, we have made both workplace and product safety everyone's responsibility—from our vehicles to corporate hallways to factory floors.

Today, our decision-making process for safety issues includes executives at the highest levels of the company and engaged employees at every level to identify potential safety issues.

### *Vehicle Safety*

Our vice president of Global Vehicle Safety, in addition to leading our product safety organization, is accountable for developing GM's vehicle safety systems, confirming and validating our vehicle safety performance, identifying emerging issues and conducting post-sale safety activities, including recalls.

Our Global Product Development organization includes a robust team of internal product investigators in North America who help identify and quickly resolve potential vehicle safety issues and safety forensic engineers who are responsible for early identification of potential vehicle safety issues. Meanwhile, Global Vehicle Engineering improves cross-system integration and addresses functional safety and compliance in the vehicle development process. We also employ a data analytics team to identify potential vehicle safety issues. This team merges multiple inputs—such as Speak Up For Safety (SUFS) submissions and dealer service records—to build a unique, comprehensive database. Statistical analysis and modeling identifies potential issues early by linking perceived disparate issues.

Programs are in place to support a culture where safety is everyone's responsibility. The Employee Safety Concerns Process provides a structure for employees at manufacturing sites to report potential workplace safety issues. Our SUFS program, meanwhile, is designed to give employees, suppliers and dealers an easy, consistent and unfiltered way to report potential vehicle safety issues. Through a toll-free phone number, a smartphone app, email or the SUFS website, submitters can report any potential vehicle safety risks and suggest improvements. From there, our dedicated safety team funnels employee concerns to the appropriate departments. Individuals track their submission through the review and decision process so they can learn more about the process and understand the status of their concern. Since the program's inception, more than 20,087 concerns and/or suggestions have been logged globally by employees and dealers.

## KEY TAKEAWAYS

- > Workplace and vehicle safety are foundational commitments that go hand in hand, and everyone at GM has responsibility for them.
- > Various organizations across GM work to address potential vehicle safety issues before they even occur.
- > Platforms such as our Employee Concerns Process and Speak Up For Safety (SUFS) leverage different ways for employees, suppliers and dealers to report vehicle or workplace safety concerns.
- > Our companywide Workplace Safety System (WSS) framework presents tangible actions to drive safe behaviors that prevent injuries on the job.
- > To instill the importance of our safety culture, performance reviews for GM senior leadership now include safety metrics.





## SAFETY: MANAGE



To reinforce a sense of personal accountability, safety is a part of employees' performance criteria for compensation.

### *Workplace Safety*

Our workplace safety vision is to “Live Values that Return People Home Safely. Every Person. Every Site. Every Day.” This vision is guided by our safety policy, which applies to all employees and others working at our sites, including consultants, agents, sales representatives, distributors, independent contractors, third-party suppliers who work on GM premises and contract workers when they perform work for GM.

Like product safety, we manage workplace safety at the highest levels through GM's Safety Oversight Committee (SOC). This committee consists of six global functional senior leaders, including the CEO, and the Global Safety Leadership Council (GSLC), which is comprised of over 20 senior global manufacturing leaders. The SOC and GSLC determine strategic global safety direction and approve all workplace safety initiatives, which are the responsibility of GM's Vice President of Workplace Safety. Workplace safety risks are evaluated monthly, and the GM Board of Directors reviews identified risks at least once per year.

We instill safety through the Workplace Safety System (WSS). This is a systematic approach that all sites use to support the GM safety culture and to drive safe behaviors that prevent injuries. The system uses global procedures, performance standards and technical standards to reinforce goals and objectives and behavioral expectations for safety.

The WSS includes a set of tools, known as elements, designed to drive continuous improvement in safety through the Plan Do Check Act (PDCA) cycle. By using the PDCA cycle it changes our mindset from “tell me what you want me to get done” to “I know what I need to do, and I know how to improve upon it”—this drives behaviors to change the culture.

Performance Standards establish the minimum global requirements to manage specific hazards common to GM sites. A subset of Performance Standards are Technical Standards, which provide additional technical details for effective implementation of the Performance Standard. Both Performance and Technical Standards requirements are mandatory for all GM Operating Units.

Senior leadership plays an important role in instilling safety throughout the GM culture. During 2017, workplace safety was incorporated as a criterion for senior leadership performance reviews. As part of our end-to-end approach to safety, GM engages leaders in every function to demonstrate safe behaviors for their teams and conduct risk assessments to address potential hazards. These could be anything from risks in the manufacturing environment to injuries resulting from sitting in an incorrectly adjusted chair. Global Safety Week, as well as other events year-round, helps leaders educate employees on safety topics.



## SAFETY: MANAGE

Also, during 2017, we made several enhancements to our workplace safety programs and policies, including:

- > Establishing a mobile device policy that was rolled out globally.
- > Requiring safety glasses in every manufacturing location.

> Ensuring consistency across all manufacturing plants for other required personal protective equipment, such as footwear.

Many GM locations also encourage workers to sign in each day with a written daily commitment to remain uninjured, further strengthening a culture that is committed to safety at work, at home and in vehicles.

### Workplace Safety System Framework

The Workplace Safety System is made up of a group of interacting, interrelated or interdependent elements which provide the tools for the implementation of safety programs at General Motors sites. The system contains five main Components that make up the Plan–Do–Check–Act cycle.



The five main Components are further broken down into 18 individual Elements, which provide the framework for the implementation of Performance Standards.



# WHAT WE MEASURE

## SAFETY

### New Car Assessment Program Top-Performing Models

(Number of models with 5-Star overall vehicle score or top overall rating out of 73 total models tested)



### 2017 & 2018 IIHS TOP SAFETY PICKS

Top Safety Pick and Top Safety Pick Plus models listed are when equipped with optional front crash prevention and are for models sold with U.S. vehicle content

#### TOP SAFETY PICK

2017 Chevrolet Bolt EV  
2017 Chevrolet Malibu  
2017 Buick LaCrosse  
2017 GMC Acadia  
2017 Cadillac XTS  
2018 Chevrolet Volt  
2018 Buick Envision

#### TOP SAFETY PICK PLUS

2017 Chevrolet Volt  
2017 Buick Envision

# 100%

2017 Buick models received a 5-Star Overall Vehicle Score\* for safety by NHTSA for the third consecutive year

### Global Deployment of Advanced Safety Technologies

(Number of models with these technologies available or as standard equipment out of 77 total models)



\* Regal 5-Star Overall Vehicle Score applies to vehicles without optional rear-seat-mounted, side-impact airbags, and Envision 5-Star Overall Vehicle Score applies to vehicles with all-wheel drive. U.S. Government 5-Star Safety Ratings are part of the National Highway Traffic Safety Administration's (NHTSA's) New Car Assessment Program ([www.nhtsa.gov](http://www.nhtsa.gov))

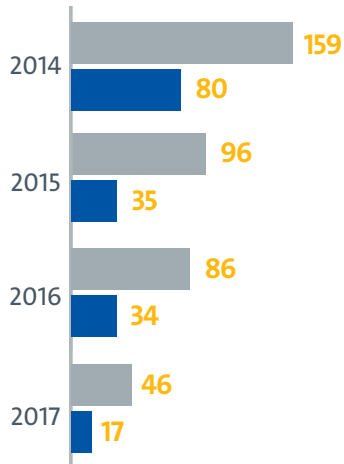


## Vehicle Safety

### GM Safety & Noncompliance Recalls\*

(number of recalls)

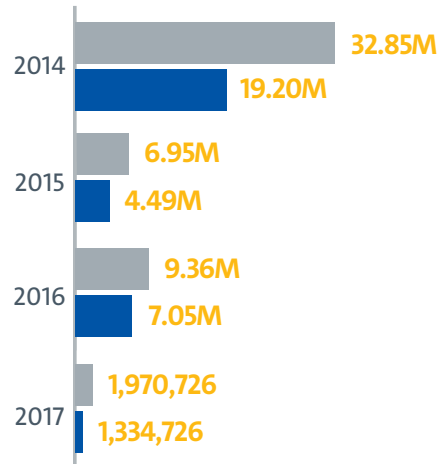
■ Global ■ North America



### GM Safety & Noncompliance Recalls\*

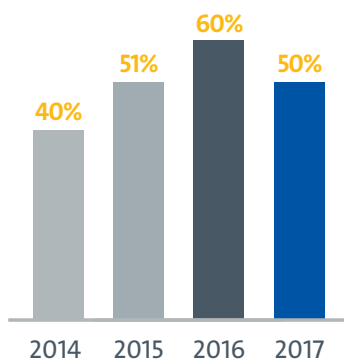
(vehicle volume)

■ Global ■ North America



By building a culture of safety, we are able to identify potential quality and safety issues earlier. In addition to a decrease in the number of recalls, we are also seeing issues related to current models surface more quickly, thereby resulting in smaller population per recall. Half of the recalls initiated in 2017 involved vehicle populations of fewer than 10,000 vehicles.

### Proportion of U.S. Recalls Involving Fewer Than 10,000 Vehicles\*



\* Includes Europe

### Speak Up For Safety Submissions

**20,087**  
TOTAL SINCE  
INCEPTION

**5,554**  
2017CY

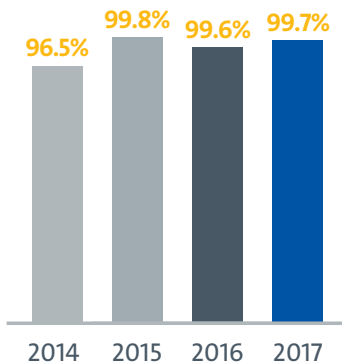




## Workplace Safety

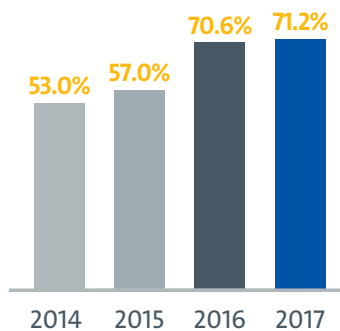
### Sentinel Events Closed on Time\*

Percent of Sentinel Events (events with fatality potential) closed on time.



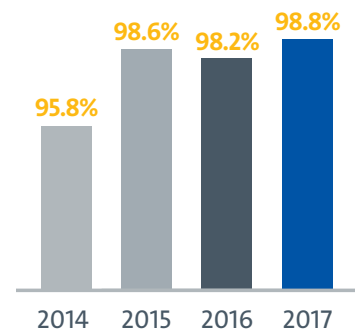
### Sentinel Events Proactive\*

Percent of Sentinel Events detected as Unsafe Acts/Conditions and that did not result in an incident.



### Global Calls to Action Closed on Time\*

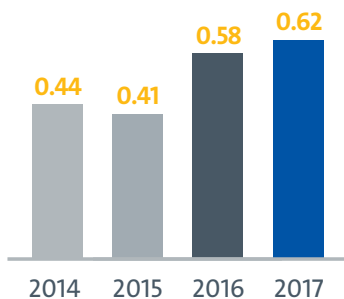
Percent of Global Calls to Action (actions required globally in response to serious incidents) closed on time.



### Lost Time Injury Rate\*

(Number of lost work day incidents per 200,000 work hours)

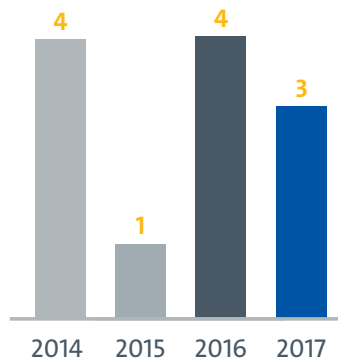
This KPI focuses on those injuries that resulted in employees' losing days from work. This helps us identify areas and processes where we should center our focus to improve our safety controls.



### Fatalities\*

(A work-related incident resulting in death)

Our target is zero, so that every person who enters a GM facility leaves safe and unharmed.

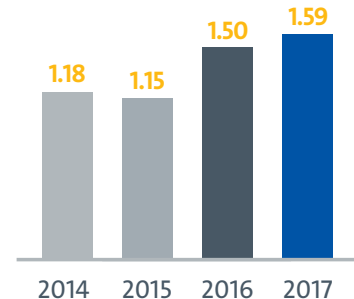


\* Includes Europe

### Recordable Incident Rate\*

(Number of incidents that resulted in injuries or illnesses that required medical treatment beyond simple first aid treatment per 200,000 work hours)

This metric helps to identify hazards, eliminate risks and drive reporting for all incidents so that we can learn and assess areas for improvement.





## ACTIONS WE ARE TAKING

### Think Beyond the Vehicle

**100K+**

are injured in traffic collisions each year



Our wide-ranging approach to safety includes not just the drivers and passengers in our vehicles, but everyone on the roadways. In the U.S. alone, more than 5,000 pedestrians are killed and over 100,000 are injured in traffic accidents each year. New levels of crash prevention and protection in GM vehicles may help save some of these lives.

The 2018 Buick Regal Sportback and TourX are GM's first U.S. vehicles to offer a standard active hood pedestrian safety system. It is designed to reduce head injuries during pedestrian impacts. Injuries are often severe and sometimes fatal when there isn't enough crush space between the hood and engine compartment. When the vehicle is traveling between 16 and 30 miles per hour and the sensor in the front bumper detects a pedestrian impact, the pyrotechnic actuators in the hinges are fired. This lifts the back of the hood automatically by about 4 inches, which creates the crush space between the hood and the other underhood components. This provides a softer landing for the head, which may significantly reduce head injuries.

It may seem like an unconventional solution, but active-hood systems have been in use in Europe for more than 10 years, when GM introduced the technology on Opel vehicles. Pedestrian fatalities have dropped by 50 percent in that time period.

The system works in tandem with other advanced safety features, including Front Pedestrian Braking, Forward Automatic Braking and Adaptive Cruise Control. When a vehicle identifies a pedestrian directly ahead and determines a collision is imminent, the system alerts the driver and, if necessary, automatically applies the brakes to help reduce the collision's severity or avoid the collision, while prepping the active hood for deployment to further mitigate the severity of impact.

*Above: 2018 Buick Regal Active-Hood Pedestrian Safety System.*

*Left: GM researchers are developing a potential driver assistance feature that could detect pedestrians, using peer-to-peer wireless signals.*

### Expand Deployment of New Technologies



*Rear Seat Reminder in the all-new 2018 GMC Terrain.*

A priority for newly developed safety technologies is to make them rapidly available throughout our product portfolio. In 2017, we expanded availability of Rear Seat Reminder to 21 Buick, Cadillac, Chevrolet and GMC models. Rear Seat Reminder monitors rear door usage to remind drivers to check their rear seats before walking away from their vehicles. The feature is intended to activate when either rear door is opened and closed up to 10 minutes before the vehicle is started or while the vehicle is running. The intent is to decrease incidents of children suffering heatstroke after being forgotten in vehicles.





Similarly, Surround Vision aims to help shrink the estimated 15,000 injuries caused every year by backover crashes. This technology, now available in select Chevrolet, GMC, Buick and Cadillac vehicles, gives drivers greater visibility of their vehicle's perimeter when backing up and parking. The technology uses four cameras: the standard Rear Vision Camera, a forward-looking camera in the front grille and two side-looking cameras under each side mirror. When drivers shift into Reverse, the bird's-eye view is displayed on the center stack instrument panel, alongside an image from the forward- or rear-looking camera, providing the driver with multiple views of the immediate area.

Rear Seat Reminder and Surround Vision build upon GM's tradition of introducing advanced technologies that may help to save lives.



Surround Vision provides a 360-degree bird's eye view around the vehicle by acting like multiple sets of eyes that help drivers quickly view their vehicle's perimeter during low-speed maneuvers such as backing up or parking.



## Data to Drive Safety and Sustainability

OnStar Smart Driver collects driving behavior metrics such as hard braking and acceleration, actions that not only can be higher-risk behaviors, but also use excess fuel and put extra strain on vehicles. The program calculates a monthly "score" and issues a report for drivers to compare to others enrolled in the program. Without revealing any personal information, drivers can share their driving data with participating insurance providers and may qualify for insurance discounts.

*OnStar Smart Driver score, which can be compared anonymously against other drivers enrolled in the service.*



## Help Teens Hit the Road Safely

# 29

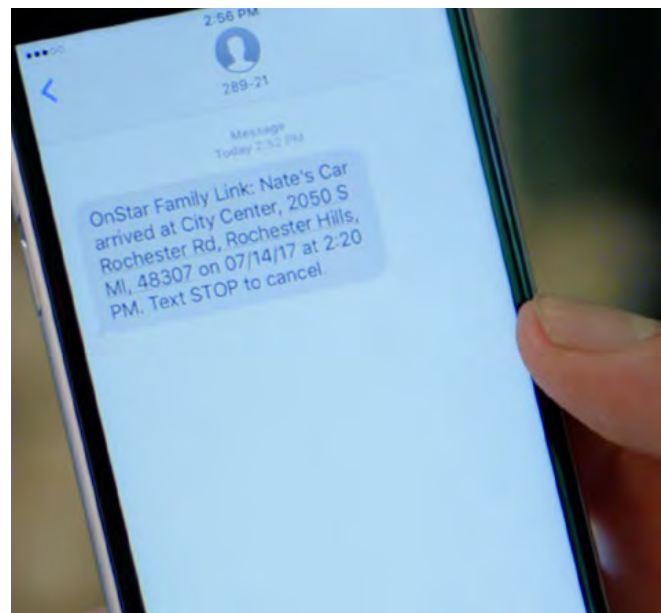
2018 Model Year  
Vehicles With Teen Driver  
Technology Available

We understand the potential elevated risks facing new drivers, many of whom are in their teens, due to inexperience.

Chevrolet has partnered with DoSomething.org, one of the largest organizations for young people and social change, to spread the word about the importance of seatbelt use. The Ride & Seek campaign combines provocative posters and an engaging text-message experience to rally young people to protect themselves and their friends. Chevrolet published additional messaging to promote safe driving and safety technologies during the “100 Deadliest Days” for teen drivers. According to AAA, crashes involving teen drivers climb between Memorial Day and Labor Day, providing an opportunity for Chevrolet to connect with teens and their parents and potentially save lives.

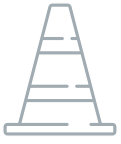
This educational campaign comes on the heels of Chevrolet’s pioneering Teen Driver platform, which provides an industry-first, in-vehicle driving report card that parents and teens can review together to help start conversations about safe driving skills. Teen Driver includes features that provide a limit on maximum radio volume, alerts when a vehicle exceeds a selectable speed threshold, muting of the radio or audio until all front seat occupants are buckled in and automatic enabling of certain active safety features.

Family Link enables relatives to stay connected no matter where they roam. Vehicle owners can view their vehicle’s location—offering additional peace of mind to parents with driving-age children or people concerned about loved ones delayed by traffic or inclement weather. Users can set up email or text alerts to know when a vehicle has arrived and departed a selected destination or has traveled outside a specific area.



*Family Link allows parents to stay connected to their teens almost anywhere their young drivers roam by providing access to teens’ vehicle locations.*



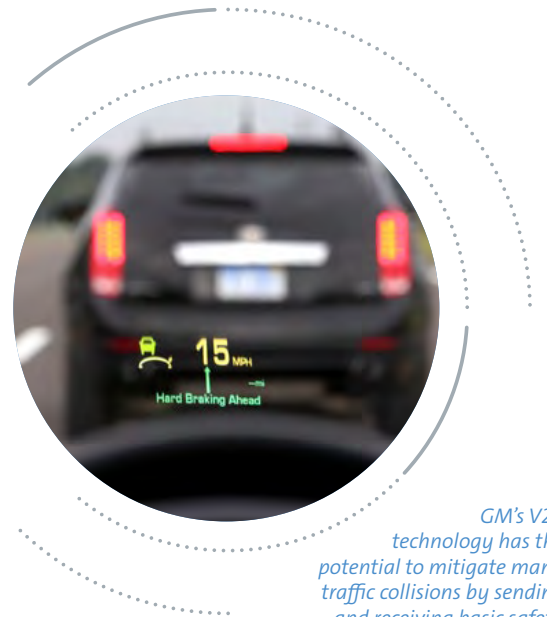


## Pioneer V2V Technologies

Cadillac continues to establish itself as a leader in production of intelligent vehicles. Beginning with 2017 interim model year vehicles, all Cadillac CTS sedans are now equipped with vehicle-to-vehicle (V2V) technology. V2V-equipped vehicles share information that can be used to alert drivers to upcoming potential hazards, laying the groundwork for game-changing safety performance.

Cadillac's V2V solution uses Dedicated Short-Range Communications (DSRC) and GPS, taking cues from other vehicles to alert drivers to potential hazards. For example, hard braking might indicate an obstacle in the roadway, while deployment of antilock brakes could suggest slippery road conditions ahead. The system can process 1,000 messages per second from vehicles up to 1,000 feet away.

This pioneering technology can communicate only with other V2V-equipped vehicles. As more V2V-enabled vehicles take to the roads, they will create powerful networks without relying on sight lines, good weather conditions or cellular coverage.



*GM's V2V technology has the potential to mitigate many traffic collisions by sending and receiving basic safety information like this vehicle's "Hard Braking Ahead" warning.*

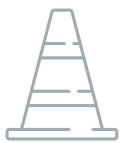
Soon after introduction of the Cadillac CTS, enabled with V2V technology, Cadillac successfully demonstrated vehicle-to-infrastructure (V2I) communication at the GM Warren Technical Center. Through V2I, vehicles receive real-time data from traffic controllers on traffic signal status using DSRC protocol. This alerts drivers to red light violations at their current speeds, which helps them avoid, for instance, the potentially dangerous decision to either brake abruptly or accelerate through a busy intersection.

## Extend Safety to Cyberspace



*Cadillac V2I Development*

In developing both V2V/V2I communication and Super Cruise™, Cadillac engineers carefully considered the security and privacy of drivers' data. V2V-equipped vehicles do not transmit any identifying information such as VIN number, registration or MAC address in their messages. If a connected vehicle runs a red light, the traffic signal may be able to say someone ran a red light, but will not be able to say who or what vehicle. DSRC signals are extremely resistant to interference as they are exchanged only between the vehicle and the infrastructure. Similarly, while Super Cruise depends on cameras to monitor a driver's head position, neither the hardware nor the software is capable of storing images.



## Reinforce a Companywide Safety Culture

Our mission is to keep our workforce, including contractors and others at our facilities, and our customers safe, but for one week a year we shine an even brighter spotlight on safety. During annual Global Safety Week, we encourage each of our sites across the globe to identify their greatest local safety needs and raise awareness about the importance of safety.

For the first time in 2017, product safety and workplace safety week activities were combined. Events included an interactive town hall with remarks from CEO Mary Barra and product and safety leaders on how GM is keeping our customers and employees safe every day. Select employees around the world shared stories about making safety personal for themselves, their coworkers and our customers. Participants were encouraged to use the town hall's video and chat features to ask questions and make comments during the broadcast.

Employees at the GM China campus in Shanghai focused on workplace safety with training on chemical emergencies, personal protection equipment, fire protection and safety contract management. GM China honored several Safety Heroes who had taken action to make the company and its employees safer, and employees signed posters pledging to make a personal commitment to safety, act with a safety mindset and help drive a strong safety culture across the company.



## Engage With Regulatory Stakeholders

General Motors has successfully concluded a three-year consent order with the National Highway Traffic Safety Administration (NHTSA), which resolved claims related to the timeliness of GM's ignition switch recalls. The order required regular, ongoing discussions between GM and the agency on recalls and other vehicle safety issues.

GM has built a positive and productive relationship with NHTSA, and we continued our dialogue on important safety issues with a new, voluntary model. We have held regularly scheduled monthly meetings with senior agency officials, with expedited discussions as needed, covering field investigations, safety recalls and other issues. GM also recommends periodic meetings with NHTSA and other stakeholders to advance safety discussions that benefit the industry as a whole. This ongoing engagement will help GM bolster lessons learned and advance motor vehicle safety—allowing us to continually keep customer safety at the center of everything we do.



*General Motors ignition assembly parts, including the parts affected under the recalls, being inspected, packaged and shipped.*



## Design and Test Safe Infotainment Systems



2017 all-new GMC Acadia Denali Infotainment.

Driver distraction is a serious challenge to manage as vehicle connectivity grows more pervasive. The National Highway Traffic Safety Administration estimates that distracted driving kills nine people and injures more than a thousand on a daily basis. To afford our customers the benefits of connectivity in the safest possible manner, we design and test GM infotainment systems according to the Alliance of Automotive Manufacturers Guidelines, which were developed to help drivers keep their eyes on the road. These principles include guidelines as to how infotainment systems are installed, how the information is presented on the screens, the ways in which drivers interact with the display and controls, and which features are available or unavailable while the vehicle is moving.

To ensure our infotainment systems meet these guidelines, we use the Driver Workload Lab at the Milford Proving Ground to test and measure the behaviors of test subjects as they interact with our vehicles' infotainment systems. These test subjects use a simulator designed to replicate certain tasks drivers can perform in our vehicles. For example, the engineers in the lab may have the subjects make a phone call using their phone book, or interact with the new Marketplace platform, all while simulating normal driving tasks such as maintaining their speed and monitoring other drivers on the road.

Engineers, statisticians and human factors experts are positioned in another part of the lab to observe and collect data that will be used in the next phases of the design and refinement of these systems. The team looks at factors such as the size of the text on the screen, the size and placement of the controls and how many steps it takes to complete a task when designing our infotainment systems. The Driver Workload Lab aims to deliver customer-desired features in a curated, bounded and driver-conscious manner.



### Distracted Driving Gets Personal for GM Executive

GM Senior Vice President of Global Purchasing Steve Kiefer's life turned upside down on Sept. 19, 2016, when his son Mitchel was killed by a distracted driver. The motorist crashed into the rear of Mitchel's car, sending it across a narrow interstate median and into oncoming traffic, where it then collided with an oncoming vehicle, instantly killing the 18-year-old.

Highway metal barrier that allows for more pliant crash impact.

After Mitchel's death, Steve established a personal foundation, The Kiefer Foundation, to help improve highway safety and end distracted driving, with the hope of preventing future tragedies. The Foundation and the State of Michigan announced a joint investment to pay for a new metal barrier on the stretch of I-96 where Mitchel was killed. GM CEO Mary Barra spoke at an event announcing the donation, commending the partnership for its potential to make our roads safer and to save lives.



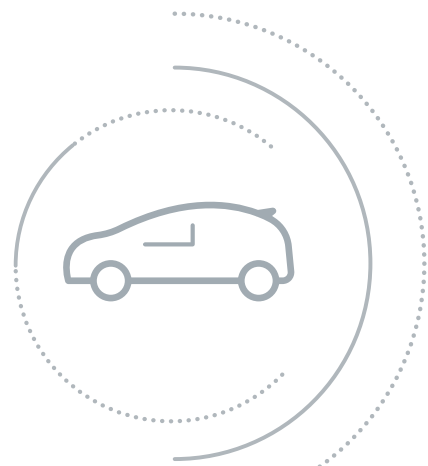


# PRODUCTS

ASPIRATION: ZERO EMISSIONS

WHAT WE ASPIRE TO: ZERO EMISSIONS .....	53
OUR MANAGEMENT APPROACH TO PRODUCTS .....	54
WHAT WE MEASURE .....	58
ACTIONS WE ARE TAKING	
Deliver America's Favorite Electric Vehicle: The Chevrolet Bolt EV .....	60
Q&A: Increase Adoption of EVs .....	61
Drive EV Demand Through Marketing .....	63
Maximize EV Battery Life .....	64
Leverage Electrification in Traditional Vehicles .....	65
Grow EVs in China .....	66
Promote Efficient Fundamentals .....	67
Lead the Next Generation of Lightweighting .....	68
Collaborate to Advance Alternative Energy .....	69





## PRODUCTS: ASPIRE

### WHAT WE ASPIRE TO:

#### 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 so that our children will inherit a healthier planet. Our journey to zero emissions entails a commitment to develop and deploy advanced technologies and to significantly enhance traditional ones. In the process, we help our customers save money over the life of their vehicle purchase by using less fuel, and we help ensure our long-term business success by complying with aggressive fuel economy and carbon-emissions regulations in markets around the world.

# OUR MANAGEMENT APPROACH TO

## PRODUCTS



GM is committed to a future with zero emissions, and electrification is the key to making that aspiration a reality. As we advance electric vehicle (EV) affordability and range, we believe the tipping point for mainstream EV adoption is approaching. We're committed to leading this charge with a mission to deliver desirable, attainable and profitable vehicles with over 300 miles of range.

That commitment is seen in the Chevrolet Bolt EV, which is capable of driving an EPA-estimated 238 miles on a single charge and sold at an affordable price. But the Chevrolet Bolt EV is more than just a car. It's a platform that has helped us see into the future and is informing the development of new generations of EVs. These vehicles will be the first of more than 20 new zero-emissions vehicles that we plan to launch in global markets by 2023.

*Battery cell modules travel down the line to be assembled into extended-range and plug-in hybrid electric vehicle packs.*

Our portfolio will be built on an all-new modular EV platform with agile battery technology. This will allow us to create a building block approach that meets changing customer demands and supports multiple drive configurations across geographic regions at lower costs. That's important in driving towards a future that is all-electric *and* profitable.

The continued development of our EV portfolio rests upon 20 years of electrification knowledge and experience and the investment of billions in research and development. Today, we estimate that about half of our more than 9,300-member Global Propulsion Systems engineering workforce is involved with alternative or electrified propulsion. We also benefit from one of the largest battery development labs in the world, as well as our own battery manufacturing facilities.

Fuel cell technology remains a component of our overall electrification strategy. It offers a solution that can scale to larger vehicles, such as trucks that have heavy payload requirements and operate over longer distances. GM has worked on fuel cells since their inception more than 50 years ago, and today is among the patent leaders in the field.

### *Growing the EV Market and Charging Infrastructure*

Creating a zero-emissions future requires accelerating acceptance of electric vehicles for everyday use. In particular, our commitment to electrification extends beyond vehicles to include the development of a national EV charging infrastructure, the lack of which is a significant customer pain point today. For the past decade, GM has been driving partnerships and collaborative efforts across a vast network of

## KEY TAKEAWAYS

- > We plan to launch 20 new zero-emissions vehicles by 2023 in global markets.
- > Our growing portfolio of electric vehicles (EVs) is key to meeting our vision of a zero-emissions future and the diverse demands of our customers.
- > We actively work with and engage stakeholders to build EV awareness and help develop national EV charging infrastructure to strengthen the EV market.
- > In addition to our focus on alternative propulsion, we remain committed to improving the efficient fundamentals of traditional propulsion technology.
- > Fuel economy and lower emissions are not only a highly regulated part of our business, but also a way in which we increase the customer value proposition of our products.
- > Faster growth in emerging markets presents a challenge, as new regulations are often aligned with those of more developed countries but household incomes are generally significantly lower.



## PRODUCTS: MANAGE



*Autonomous Bolt EV.*

stakeholders to help stimulate the EV market. These efforts include promoting and supporting public policy enablers for EVs, harmonized industry standards, electrician training programs, advocacy for supportive state policies, utility engagement, sustainable infrastructure solutions and EV awareness-building campaigns. As an example, we have worked with more than 50 utility partners over the past decade to promote EV charging infrastructure. GM is committed to playing a constant and leading role in encouraging all stakeholders to do their part to energize the EV market.

### *Linking Electrification and Autonomous Technologies*

In tandem with increased electrification of vehicles is the introduction of cars with autonomous capabilities. Our strategies for these two technologies are inextricably linked, starting with our belief that all AVs must be EVs. From an engineering standpoint, autonomous technology can be integrated into an EV more easily than in a gas-powered or hybrid vehicle. Advanced automation will enable mobility for more people. And, autonomous vehicles that are electric and connected will offset potential issues should more vehicles be on the road for some period of time.

Deploying the two technologies on new vehicles will increase acceptance of both electrification and automation—and help GM make progress toward our goals of zero crashes, zero emissions and zero congestion all at once.

### *Improving Conventional Vehicle Efficiency*

EVs are GM's future. As we move closer to our vision of an all-electric portfolio, we also are committed in the nearer term to improving the efficiency of vehicles that rely on the internal combustion engine. Our Efficient Fundamentals strategy supports this effort through continual improvements in vehicle engine and transmission efficiency, and weight. These simple improvements eliminate material use in manufacturing, while reducing fuel use and costs for customers.

A continued focus on Efficient Fundamentals is especially important during times of sustained lower fuel prices, which change the dynamics of consumer purchasing behavior. During such times, it can be more challenging to increase sales of fuel-efficient models and gain broad market acceptance of higher-cost, advanced fuel-saving technologies such as EVs. Lower gasoline prices also translate into a longer payback period for customers who often have paid a premium for advanced technologies. As a full-line automotive manufacturer, our portfolio ranges from compact vehicles that meet urban requirements to powerful full-size trucks that meet customer utility needs, and GM is dedicated to making new levels of efficiency possible for even the largest conventional vehicles.



*Cruise AV Technology.*



### *Regulatory Engagement*

On a global basis, fuel economy and greenhouse gas emissions remain top-of-mind priorities for the transportation sector and apply to all GM products globally. Emission requirements have become more stringent as a result of lower emissions standards and new on-board diagnostic requirements, which have come into force in many markets around the world, driven by policy requirements such as air quality, energy security and climate change.

The same transformative changes we're responding to as a company also have implications for regulations like the Corporate Average Fuel Economy (CAFE) standards in the United States. For example, when the current CAFE standards were finalized in 2012, shared mobility was in its earliest stages, and autonomous vehicles did not even exist. We want to be sure that the regulations accurately account for the current and likely future state of our industry. In addition, we have recommended that EV incentives continue and that regulations be harmonized between NHTSA and the EPA, working toward a single national standard. Common standards will allow us to advance innovation today and better prepare for the future.



### **Our Position on Climate Change and Fuel Economy Standards**

At General Motors, we take the challenge of climate change seriously. We recognize that the transportation sector is a leading contributor to global greenhouse gas emissions. We acknowledged long ago that climate change is real and we have consistently and publicly advocated for climate action and awareness, and policies putting a value

on carbon. It is a driving force behind our vision of a future of zero crashes, zero emissions, and zero congestion.

Our global commitment to improving fuel economy, reducing emissions, and an all-electric, zero-emissions future is unwavering, and regardless of any modifications to existing emissions standards as is currently under review in the United States. In the U.S., we support modernizing the standards and creating one national program that includes California. We intend to continue working with the California Air Resources Board, Environmental Protection Agency, and the National Highway Traffic Safety Administration on standards to improve fuel economy and our environment.

We are committed to transparent disclosure of our greenhouse gas emissions and actions we are taking to reduce them globally. We have consistently reaffirmed these points with our global employees and other stakeholders, including policymakers, regulators and shareholders.

China implemented the China 5 emission standard nationwide in 2017, which is more stringent than the previous program at every level. The next round of standards, known as China 6, may roll out in some cities as early as 2019. China 6 combines elements of both European and U.S. standards, including stronger emission requirements and extended time and mileage periods over which manufacturers are responsible for a vehicle's emission performance. We welcomed these changes—in fact, GM gave input as the new standards were being drafted, sharing best practices from our experiences in North America. Another important regulation in China is the New Energy Vehicle (NEV) mandate, which allows manufacturers of passenger cars to earn credits for producing a certain volume of hybrid, battery electric and fuel cell vehicles. This policy, combined with consumer subsidies for purchasing NEVs, has made China an important market for our electrification solutions.

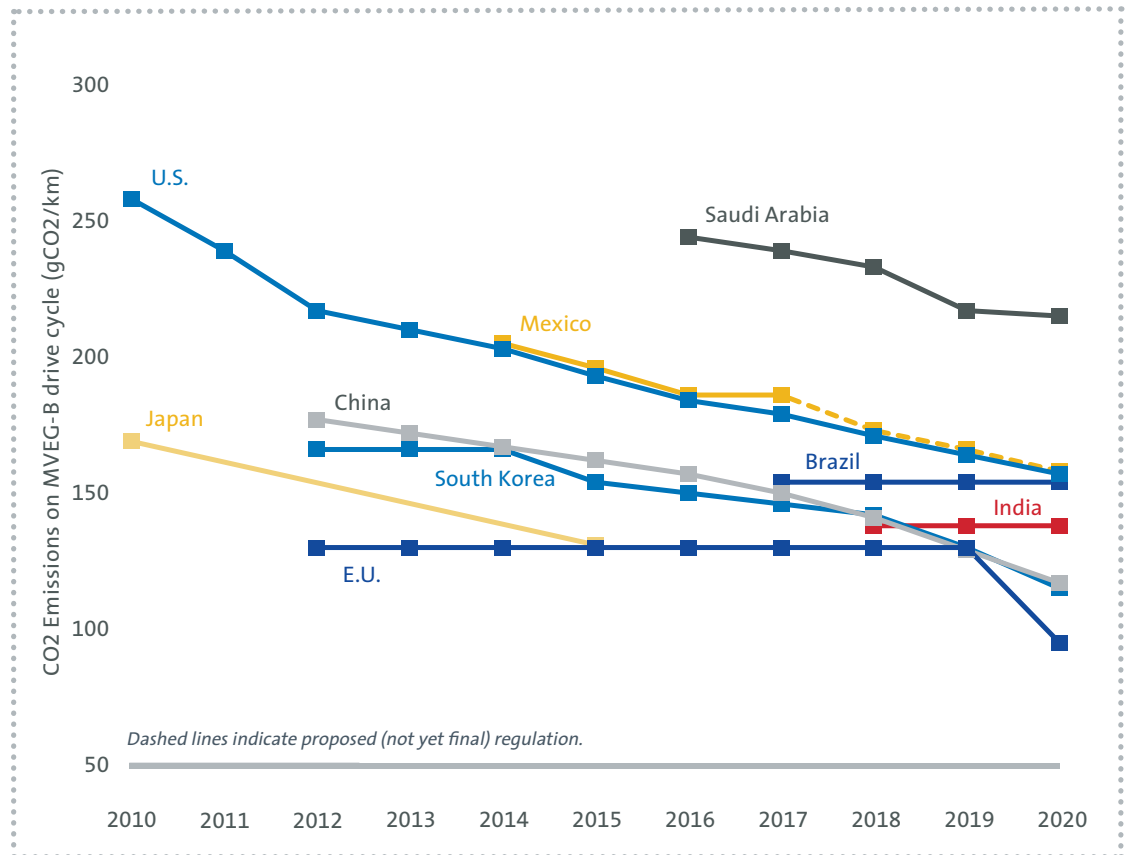
The most effective path toward that future is regulation with one set of standards that enables us to optimize innovation efforts. Regulation also should factor in industry developments that have occurred since the policy went into effect, namely autonomous EVs and the advent of new business models that move away from the concept of one vehicle, one owner. Because broad consumer acceptance of EVs is critical, we also support continued incentives to make EVs more affordable for more customers.

Many countries around the world are adopting regulatory standards similar to either those of the U.S., which are based on a footprint metric or size of the vehicle, or those of the EU, which are weight-based. In many cases, there are regulatory inconsistencies when fuel-saving solutions under one system do not translate to another. Though harmonized standards among countries are in the best interests of our customers and the environment, we realize development and acceptance can take years. That's why we favor mutual recognition agreements, a practice by which two or more markets agree to recognize each other's standards and eliminate costly and nonbeneficial redundancies.





## Global Fuel Economy / CO2 Outlook



Increasingly stringent regulations related to mobile CO2 emissions and fuel economy are common throughout key business regions in the world.

Source: GM Public Policy

We are also focused on emerging markets, where we expect to realize a significant amount of business growth in coming years. In these markets, we want to find affordable product solutions for our customers, who generally have lower average household incomes, while meeting fuel economy mandates and regulations that are often aligned with those of more developed countries.

Within GM, we have institutionalized extensive governance processes that predict, plan, measure and assess our fleet's fuel economy and emissions performance according to established government

test procedures on a dynamic and country-by-country basis. We dedicate significant resources and use a complex algorithm to calculate the fuel economy of dozens of models sold across developed markets with increasingly stringent regulations, as well as emerging markets that are adopting similar regulations at a rapid pace. These calculations and the subsequent plans around them are an intrinsic part of our business that impacts nearly every operational function, from product development through delivery, on a daily basis.

# WHAT WE MEASURE

## PRODUCTS

### Lightweighting Initiatives: Potential Savings



**35 million**  
GALLONS FUEL  
SAVED

**357**   
AVERAGE POUNDS  
LOST PER VEHICLE

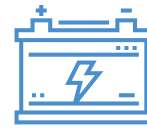
**312,000**  
METRIC TONS CO<sub>2</sub>  
AVOIDED

*Our global mixed-materials strategy allows us to incorporate the most appropriate materials for each part of the vehicle to maximize the performance and minimize the weight of our vehicles, improving fuel economy and reducing material use.*

### Research & Development



**\$7.3 billion**  
2017 R&D  
INVESTMENT



**\$145**  
BATTERY CELL COST  
PER KILOWATT HOUR

*Battery development is a continued focus of our R&D investments. Reducing battery cost helps to increase the affordability of EVs and drive mainstream acceptance.*

### EV Portfolio



**40,771**  
GLOBAL EV  
VOLUME

**191,624**  
METRIC TONS OF CO<sub>2</sub>  
EMISSIONS AVOIDED

**470 million**  
GASOLINE MILES  
DISPLACED



*Our strategy is focused on driving widespread consumer adoption of EVs in pursuit of our zero emissions aspiration.*

### Chevrolet Bolt EV Marketing

**#1**

CHEVROLET  
TOTAL MEDIA SPEND  
PER VEHICLE



**#3**

CHEVROLET  
OVERALL  
ADVERTISING SPEND



**#10**

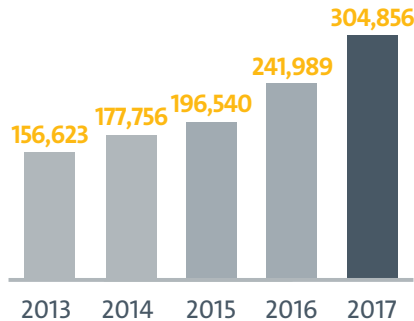
CHEVROLET  
SALES VOLUME

*On a proportional basis, our marketing investments in support of EVs is on par with conventional vehicle models, and in some cases, even greater.*



## U.S. Electrified Vehicles:

Vehicles on the road in the U.S. with some form of electrification

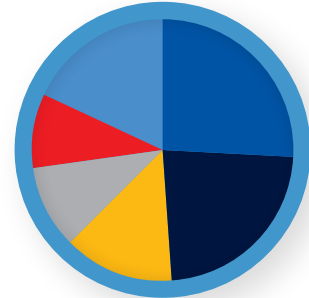


There is acceleration in the uptake of electrified vehicles.



## Global EV Portfolio

2017 GLOBAL SALES OF ELECTRIFIED VEHICLES



Chevrolet Bolt EV

Chevrolet Volt

Cadillac XT5 with eAssist

Baojun E100

Chevrolet Malibu Hybrid

Other:

Buick Velite 5

GMC Sierra with eAssist

Buick LaCrosse with eAssist

Buick LaCrosse HEV

Chevrolet Silverado with eAssist

Cadillac CT6 Plug-In

Buick Regal HEV

Chevrolet Spark EV

Total: 109,666

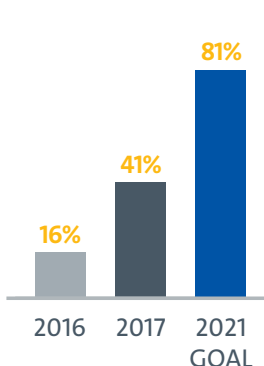
**13**

Global Models With  
Some Form of Electrification

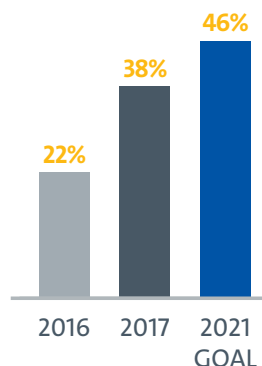
## An Unprecedented Expansion of Technology

Percent of Total U.S. Volume

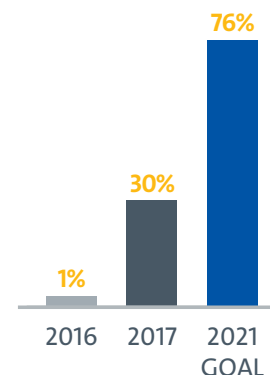
### STOP-START TECHNOLOGY



### DOWNSIZED-TURBO ENGINES



### ADVANCED TRANSMISSIONS





## ACTIONS WE ARE TAKING

### Deliver America's Favorite Electric Vehicle: The Chevrolet Bolt EV

We set a goal of producing the world's first long-range electric vehicle at a price within reach of most American consumers, and the Chevrolet Bolt EV, now available nationwide, has enabled us to deliver on that goal. The Bolt EV builds upon lessons learned from the Chevrolet Volt, which provided long-range hybrid electric performance at an affordable price and has sold more than 130,000 units since its release in 2010. The Bolt EV represents the next generation of EV innovation, affordability and range—and, in its first year of sales, is topping charts and delighting customers across the country.

**WITH NEARLY 40 INDEPENDENT AWARDS WON,**  
the Bolt EV is the most awarded electric vehicle  
of the year. Recognitions include:

**2018 WARDS 10 BEST ENGINES**  
**2017 TOP SAFETY PICK AWARDS**  
**10 BEST ENGINES INSURANCE**  
**INSTITUTE OF HIGHWAY SAFETY**

**MOTOR TREND 2017 CAR OF**  
**THE YEAR**

**2017 NORTH AMERICAN CAR**  
**OF THE YEAR**

**GREEN CAR JOURNAL GREEN**  
**CAR OF THE YEAR**

**GREEN CAR REPORTS BEST CAR**  
**TO BUY 2017**

**CAR & DRIVER 10 BEST CARS**  
**FOR 2017**

**DETROIT FREE PRESS 2017 CAR**  
**OF THE YEAR**

**TIME MAGAZINE 25 BEST**  
**INVENTIONS OF 2016**

**POPULAR SCIENCE 10 GREATEST**  
**AUTOMOTIVE INNOVATIONS**  
**OF 2016**

### Satisfied Customers

Thousands of Chevrolet Bolt EV owners are now benefiting from the vehicle's no-compromise electric driving experience.

"It's been everything I had hoped! The CUV styling fits my family of four just fine, and the EV performance and 200-plus mile range simply can't be beat at this price point."

*Brian Ro, Columbia, Maryland, Bolt EV Owner*

"Everyone who rides in it just loves it. It's very modern feeling and so easy to drive."

*Maria Mrasz, San Francisco, California, Bolt EV Owner*

"The Chevrolet Bolt EV is an affordable, world-changing vehicle that delivers on the promise of an electric car for the masses."

*Drew Winter, WardsAuto*

### Best-Selling

**29,325**  
**Bolt EVs Sold**  
**in 2017**

### Industry-Leading Price and Performance

The Bolt EV offers benchmark EV performance at an affordable low price.

**238**   
**miles**  
EPA-Estimated Range

**310**   
**miles**  
Longest  
Continuous Trip by a Bolt EV  
Owner on a Single Charge



**60 kWh**  
Battery Capacity



**\$37,495**  
Base Model Starting Price



**\$7,500**  
Federal Tax  
Credit Available





## Increase Adoption of EVs



A CONVERSATION WITH BRITTA GROSS,  
DIRECTOR, ADVANCED VEHICLE  
COMMERCIALIZATION POLICY



After 1 year,  
**nearly  
1 million**  
Maven passengers have  
ridden in a Bolt EV.

**Q**

How does GM approach the mainstreaming of electric vehicles?

**A**

Since the earliest days of the Volt program, we have been focused on putting in place all the foundational elements needed to ensure the EV market grows and thrives for decades and beyond. At its core, this means driving towards hardy industry standards that will grow with technology, enabling sustained investment in EV charging infrastructure that includes expert utilities, utility regulators and charge station service providers, and partnering with the broadest possible array of national, state and local stakeholders to drive EV awareness programs and supportive policies for consumers. We have built a strong reputation with all of the above, as well as with our industry peers, and these relationships are allowing us to generate support for legislation, infrastructure programs and awareness campaigns.

**Q**

What strategies has GM found to be most effective in promoting EV commercialization?

**A**

Consumers are looking for supportive policies that make the EV purchasing decision a no-brainer. Vehicle incentives for consumers in states like New York, Massachusetts, Connecticut and California can be just the thing needed to tip the balance in favor of purchasing an EV. And HOV-lane access for EVs has proven to

be equally effective in regions with high traffic congestion, such as in Los Angeles, Atlanta and on Long Island. In the long run, it will be supportive policies as simple as buying a new home that includes a home charger or finding an employer that provides workplace charging!

**Q**

What are some current initiatives that GM is involved with?

**A**

We know it's critical to increase consumer-awareness of EVs. Consumers still don't broadly understand the cost-savings potential of driving on electricity, or the convenience of waking up every morning to a full tank of "fuel", or the sheer joy of driving an EV. To that end, we're leveraging the Bolt EV in our expanding Maven ride-sharing programs in San Francisco and six other cities to increase exposure to EVs—and after just one year, nearly 1 million Maven passengers have taken a ride in a Bolt EV, addressing our goal of "butts-in-seats" as the single best way to grow EV adoption! In addition, we have board steering positions on both the Northeast multi-state "Drive Change. Drive Electric." EV Awareness Campaign and a similar EV awareness campaign being developed in California. We believe these collaborative outreach efforts among automakers, states and other key stakeholders are important.



What is GM's vision for EV infrastructure development over the next several years?



Given our focus on long-lasting (i.e. sustainable) EV charging infrastructure solutions, we are deeply engaged with the electric utility industry, utility regulators, the states, EV charging service providers and numerous EV-related state and local infrastructure stakeholder efforts, to pave the way for sustained EV charging infrastructure investments. In the past year, GM has supported over 20 utilities in program filings, testified at more than 10 state/federal legislative and regulatory hearings and reviewed state plans, filing over 50 official comments with states to help shape investments in EV infrastructure. We've initiated a national collaborative stakeholder effort to drive available state funding towards EV infrastructure, and funded another collaborative industry effort to

educate state utility regulators on the benefits of EVs and the need for utilities to prepare for this "smart" load. Through all these efforts, it is now expected that over the next several years, we will see major EV infrastructure investments in the majority of states, including a combined \$260 million or more in state-directed funds, an additional \$500 million investment in a national infrastructure program and at least \$300 million in utility investments, based in part on precedent-setting approvals by utility regulators in Oregon, Ohio, Massachusetts and other states. Furthermore, we've partnered with an EV service provider to help build a market for shared mobility services based on urban DC fast-charging. Consumers want to know there is enough EV charging infrastructure to ensure they can drive anywhere they need to go—and we are seeing the critical building blocks for a scalable and sustainable infrastructure solution coming together.

## Engage With Partners and Stakeholders to Promote EV Market Growth



### Education & Awareness

DOE Clean Cities, Electrify America, NESCAUM, Plug In America, Sierra Club, Veloz



### Legislation & Incentives

Electric Drive Transportation Association, National Resources Defense Council



### Analysis

National Renewable Energy Laboratory, University of California Davis, Idaho National Laboratory, New York State Energy Research & Development (NYSERDA)



### Industry Standards

SAE International, Argonne National Laboratory, National Fire Protection Association



### Infrastructure

Edison Electric Institute, Electric Power Research Institute, Electrify America, Alliance for Transportation Electrification



### State Task Forces

Clean Fuels Ohio, Drive Electric, Florida, Forth, Clean Fuels Michigan, Maryland EVIC, Massachusetts ZEV Commission, CalETC



*Chevrolet Bolt EV.*

## Drive EV Demand Through Marketing

Electric vehicles are expected to be

**30%**

of new car sales by 2040, up from 1 percent of sales today

—IHS Markit

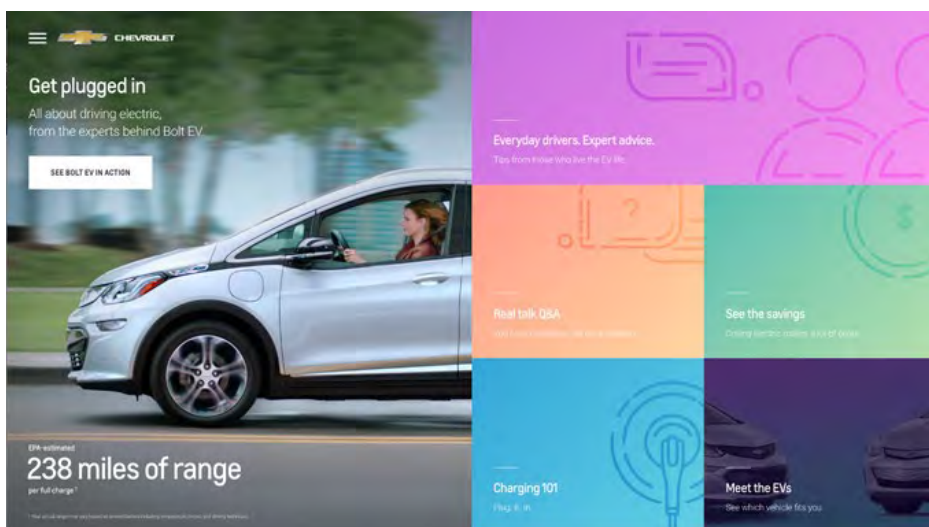
A critical way to increase sales of electric vehicles (EVs)—and thereby achieve our goal of a zero-emissions future—is to drive consumer demand for these products. GM is moving the needle by investing heavily in marketing and advertising of our electric and hybrid-electric vehicles and building relationships that will help drive EV awareness and acceptance.

In 2017, the Chevrolet Bolt EV led Chevy vehicles in total media spend per vehicle and was number three in overall advertising spend, even though the Bolt EV ranks only 10th in sales volume among Chevrolet vehicles. This spending supported a full multimedia campaign, exposure programs for

dealers, a customer relationship management program, ride and drive opportunities for influencers and customers and the Chevy EV Life website, designed to answer questions about driving electric for all levels of EV customers. Partnerships with GM Fleet, as well as the popularity of Bolt EVs with Maven customers, are further increasing interest—since February 2017, Bolt EVs in ride-sharing services across seven cities have given over 1 million rides to consumers who otherwise may not have had any exposure to EVs.

These efforts delivered. In 2017, the Chevrolet Bolt EV was the nation's best-selling affordable battery electric vehicle.

Because building consumer demand for EVs is so critical, we are working to better understand current and prospective EV owners with several targeted research initiatives. For example, we used the existing Chevrolet Mystery Shopper process to gain insight into customers' EV sales experience. A survey of Bolt EV owners who purchased vehicles within the first months that the Bolt EV was available, compared to those who purchased later, revealed steady improvements in customer satisfaction with dealers. The survey also provided greater understanding of the demographics of Bolt EV owners, which will allow us to better focus future advertising and marketing efforts.



*Chevy EV Life website.*





## Maximize EV Battery Life

More than  
**100K**  
batteries will have been  
retired by 2027



2017 Chevrolet Bolt  
EV battery system.

Lithium-ion batteries store the energy that powers our plug-in hybrid and electric vehicles. Like the internal combustion engines found in conventional vehicles, batteries are designed for extended life but have components that may eventually wear out. Batteries from Chevrolet Volt hybrids, Chevrolet Bolt EVs and future GM EVs are no exception: We estimate that more than 100,000 batteries will have been retired by 2027, and that number will more than double by 2030.

This presents an opportunity for automakers like GM to make an already environmentally friendly technology even more sustainable: finding ways to maximize batteries' useful life, direct them to secondary uses and eventually recycle their component parts. While the hybrids and EVs on the road today may have years of usable life ahead, GM is proactively developing a battery life cycle management strategy that will increase our vehicles' residual value, provide sustainability benefits and, through repurposing batteries for stationary storage, reduce the impact that a proliferation of EVs will have on the electrical grid.

Our strategy begins with vehicle service, where we strive to minimize costs and to make the service experience as pleasing to the customer as possible. In many cases, only one part of a battery will need to be replaced. This can be done at a dealership, eliminating the costs and resources that would be expended for a full battery replacement.

When battery components or full battery packs are returned, we perform a root cause analysis, feeding any knowledge we gain back to the design process. After analysis, there are three main paths a material may take: refurbishment, secondary use or efficient recycling. We choose the best path for each battery or component based on what best fits the capabilities of the material and what will bring the most value.

Stationary applications may provide a promising second life for EV batteries. As batteries age, they lose their ability to quickly discharge power. While fast discharging is important for getting vehicles moving in an instant, it is less essential for applications like supplying electricity to buildings, which have steadier, more predictable energy needs. When a Chevrolet Volt is retired, up to 80 percent of its battery storage capacity remains. The secondary use potential of these batteries is on display at Milford Proving Ground, where five Volt batteries help power a GM data center.

The final stage of the battery life cycle is recycling, a process that can be complex and costly. We are engaging with stakeholders on this issue through leadership in the National Alliance for Advanced Transportation Batteries (NAATBatt) and U.S. Advanced Battery Consortium, exploring ways to increase the value of recycled materials, optimize logistics and simplify the recycling process.



Used Chevrolet Volt batteries are helping keep the lights on at the new General Motors Enterprise Data Center at its Milford Proving Ground in Milford, Michigan. Five Volt batteries work with an adjacent solar array and two wind turbines to help supply power to the data center's administrative offices.





2018 Cadillac CT6 Plug-In Hybrid.

## Leverage Electrification in Traditional Vehicles

### Cadillac CT6 with Plug-In Propulsion

Combined driving range of

**440**  
MILES

All-electric range up to

**31**  
MILES

Combined fuel economy rating of

**62**  
MPGe

As we add all-electric vehicles to our portfolio, we are also leveraging electrification technologies in vehicles with traditional gasoline engines. Cadillac, for example, has added a Plug-In propulsion system to its range-topping CT6 sedan, which more than doubles the fuel economy of the conventional powertrain offerings. The CT6 Plug-In system is designed to provide all-electric driving for most daily commutes, while maximizing fuel efficiency through blended power from the engine and battery at higher speeds and higher loads, even when energy is stored in the battery.

The vehicle is rated by the EPA for an estimated combined driving range of 440 miles, an all-electric range up to 31 miles and a combined city/highway fuel economy rating of 62 MPGe combined. The CT6 Plug-In also features Regen on Demand, which allows the driver to temporarily regenerate energy from vehicle momentum into electricity and store in the battery pack for later use.

Likewise, the 2018 Buick LaCrosse expands its electrification credentials with eAssist light electrification. This new eAssist system, when

coupled with the four-cylinder engine, offers a 19 percent increase in city fuel economy compared to the LaCrosse's advanced V-6. The system leverages a compact lithium-ion battery pack to provide select benefits found in fully electric vehicles, such as torque-assisted launch, energy-saving regenerative braking and exceptionally smooth stop/start. The system is the standard powertrain for the 2018 LaCrosse, making electrification accessible to more customers in discreet packaging that maintains the LaCrosse's fold-down rear seat and ample trunk space.



2017 Cadillac CT6 Plug-In.



*FNR-X hybrid-electric crossover is an all-purpose sports concept vehicle.*

## Grow EVs in China

China is a key market for GM's electrification solutions. Our joint venture with Chinese automaker SAIC will position GM well to compete in the largest market for EVs in the world. By 2019, sales in China should meet the country's new energy vehicle (NEV) production quotas without the need to buy credits. The growth of our Chinese fleet will allow us to drive EV scale and efficiencies not only in China, but across the globe.

Between 2016 and 2020, we plan to roll out at least 10 NEVs in what is the world's largest automotive market today. These vehicles include the Cadillac CT6 Plug-In, the Buick Velite 5 extended-range EV and the Baojun E100 EV. By 2025, nearly all models from GM's global brands in China—Buick, Cadillac and Chevrolet—will offer electrification technology. To support GM's growing NEV fleet planned for China, SAIC-GM, a joint venture between GM and SAIC, recently opened a new battery assembly plant in Shanghai.

At Auto Shanghai 2017, Chevrolet gave customers a glimpse of a new hybrid-electric crossover with the FNR-X all-purpose sports concept vehicle. Developed at GM's Pan Asia Technical Automotive Center (PATAC), a joint venture between GM and Chinese automaker SAIC, the FNR-X can switch between two driving modes: V (Versatility) and S (Sport). Sport mode lowers the vehicle, modifies the suspension and adjusts spoilers and side skirts to reduce drag.

The GM China Science Lab received the Best Innovation Practice in China award from the Yicai Media Group. The Shanghai-based facility was established to strengthen GM's domestic and global R&D capability, and has applied for more than 200 international patents.



*GM China Science Lab helps drive automotive industry forward with open innovation system.*



*Baojun E100 EV.*





*Above: 2018 Cadillac XTS luxury sedan is elevated with the new generation of design and technology.*

## Promote Efficient Fundamentals

We continue to make significant strides in the efficiency of our traditional fleet through the deployment of Efficient Fundamentals. This approach is designed to create leading-edge CO2 emissions improvements applied in a cost-effective manner across our product portfolio, regardless of the powertrain source.

Focusing on Efficient Fundamentals attacks the efficiency challenge at the most fundamental engineering levels, such as vehicle weight, vehicle drag, engine downsizing, transmission and engine efficiency, systems integration and reduction of complexity. Making our vehicles lighter and more powerful benefits our customers: Reducing mass by 10 percent improves fuel efficiency by about 5 percent. Lighter vehicles also eliminate billions of dollars in costs and millions of pounds in materials.

Our global mixed-materials strategy allows us to incorporate the most appropriate materials for each part of the vehicle—such as high-strength steel, aluminum, carbon fiber and magnesium—to maximize the performance and minimize the weight of our vehicles. The 2018 Cadillac XTS, for

example, has a composite intake manifold that saves approximately 5.5 pounds over the weight of a comparable aluminum intake. The vehicle's integrated cylinder head/exhaust manifold design also saves approximately 13 pounds per engine.

We employ a suite of technologies, including downsizing, turbocharging, “stop-start” technology, direct injection, variable valve timing and cylinder deactivation, to improve the thermodynamic efficiency of gasoline engines. Turbocharging is one of the most important innovations allowing lighter vehicles to achieve greater fuel economy. The technology allows us to make our engines smaller without sacrificing peak power, which enables our customers to go farther on a gallon of gas. GM has 15 gasoline turbocharged model vehicles in the U.S.

These technologies are leading to a portfolio of GM engines that are considerably smaller, cleaner and more efficient than in the past, while maximizing usable power and performance characteristics important to our customers. Combined with improvements in weight and other characteristics, these engines are powering a fleet that is among the most efficient across our markets and which boasts reduced material usage, costs, and development time and expenses compared with previous generation vehicles.

*The Buick Envision's 2.0-liter turbocharged engine benefits from the efficiency of stop/start technology.*

**17**

TOTAL  
models with  
Stop-Start Technology



Reducing mass by  
**10%**  
improves fuel  
efficiency by about  
**5%**



*The 2019 Chevrolet Silverado is up to 450 pounds lighter than the previous model through use of mixed materials.*

## Lead the Next Generation of Lightweighting

### Making GM Vehicles Lighter

Generative Design

**150+**  
PERMUTATIONS

**1**  
PART

Consolidating  
8 Components Into

**1**  
PART

**40%**  
LIGHTER  
and  
**20%**  
STRONGER

Today, GM's ability to manufacture lighter vehicles is saving millions of gallons of fuel and avoiding hundreds of tonnes of CO2 emissions annually. There is opportunity, however, to reduce vehicle mass on an even greater scale. Advanced software design technology is ushering in the next generation of vehicle lightweighting that will lead to more efficient alternative propulsion and zero-emission vehicles.

GM is the first automaker in North America to use a new, generative design software that employs cloud computing and AI-based algorithms to rapidly explore multiple permutations of a part design. The software allows a user to set various goals and parameters based on weight, strength, material choice, fabrication method and other factors to determine the best design option for a given vehicle part. GM engineers will be able to explore hundreds of ready-to-be-manufactured, high-performance design options faster than they were able to validate a single design the old way.

When this technology is paired with manufacturing advancements, such as 3D printing, it will be possible to co-create vehicle parts with a computer in a way that completely transforms the vehicle development process. The result will be significant vehicle mass reduction and greater parts consolidation opportunities than could be achieved through traditional design optimization methods.

Already, GM and Autodesk, who developed the software, have applied this technology to produce a proof-of-concept part—a seat bracket—that is 40 percent lighter and 20 percent stronger than the original part. The technology also consolidates eight different components into one 3D-printed part. As part of a multiyear alliance focused on innovation, GM and Autodesk plan to collaborate on projects involving generative design, additive manufacturing and materials science.

Since 2016, GM has launched 14 new vehicle models with a total mass reduction of 5,003 lbs., or 357 pounds average per vehicle. Most of the weight reduction is a result of material and technology advancements. Of those models, more than half of the vehicles shed 300 pounds or more, including the 2019 Chevrolet Silverado, which reduced mass by up to 450 pounds.



*3-D printed seat bracket.*





## Collaborate to Advance Alternative Energy



*The Silent Utility Rover Universal Superstructure (SURUS) platform is a flexible fuel cell electric platform with autonomous capabilities. SURUS was designed to form a foundation for a family of commercial vehicle solutions that leverages a single propulsion system integrated into a common chassis.*

Fuel cell technology addresses many of the major challenges facing automobiles today: petroleum dependency, emissions, efficiency, range and refueling times. This technology is an electric vehicle that produces electricity on board rather than storing it in a battery that plugs into the grid. Fuel cell vehicles can operate on hydrogen made from renewable sources such as wind and biomass, and water vapor is the only emission they produce.

Fuel cell technology remains a component of our overall EV strategy, and fuel cell-powered vehicles will play a role over the long term. Fuel cell offers a solution that can scale to vehicles with large payload requirements and operate over longer distances. GM has worked on fuel cells since their inception more than 50 years ago.

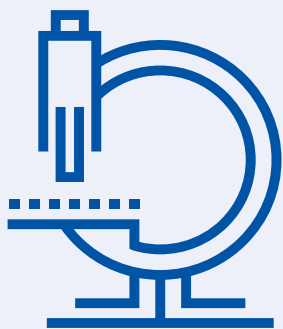
For fuel cells to be adopted more broadly, however, lower development and manufacturing costs, as well as improved refueling infrastructure, are required. To address these barriers, GM and Honda announced the creation of Fuel Cell System Manufacturing LLC (FCSM), a 50-50 joint venture to provide both companies with fuel cells for multiple applications in the 2020 timeframe.

FCSM production is based at the same Brownstown, Michigan, facility where GM assembles battery packs for electric vehicles. GM and Honda are pooling their intellectual property, and will each receive their fuel cells from this plant. The venture was recognized by Environmental Leader as a 2017 Project of the Year.

Our latest fuel cell innovation is the Silent Utility Rover Universal Superstructure (SURUS), a four-wheel steer concept vehicle on a heavy-duty truck frame driven by two electric motors. With its capability and flexible architecture, SURUS can be used as a delivery vehicle, truck or even an ambulance—all emissions-free.

### Research Honors

GM researcher Scott Jorgensen received a rare joint Lifetime Distinguished Service Award from both the Fuel Cell Technologies Office and the Vehicle Technologies Office within the Department of Energy. The award commemorates his work on hydrogen and fuel cells and EV battery R&D. Anusorn Kongkanand, advanced catalyst project lead in GM Fuel Cell R&D, was recognized by the Hydrogen and Fuel Cells Program for developing a low platinum group metal catalyst that exceeds DOE's 2020 performance targets.





# PERSONAL MOBILITY

ASPIRATION: ZERO CONGESTION

WHAT WE ASPIRE TO: ZERO CONGESTION .....	71
OUR MANAGEMENT APPROACH TO PERSONAL MOBILITY .....	72
WHAT WE MEASURE .....	75
ACTIONS WE ARE TAKING	
Provide Connectivity for Fleet Customers .....	76
Redefine Car Sharing With Maven .....	77
Utilize Maven to Enhance EV Awareness .....	78
Solutions for Cities .....	79
Scale Production of Autonomous Vehicles .....	80
Lead the Industry With Intelligent Vehicles .....	81
Q&A: How We Are Ensuring a Cyber Secure Future .....	82
Align and Optimize Cybersecurity Management .....	83



## PERSONAL MOBILITY: ASPIRE

### WHAT WE ASPIRE TO:

#### 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. This revolution will unlock progress toward each of our aspirational goals: zero crashes, zero emissions and zero congestion. GM is bringing this future forth with innovations that are rewriting the rules of vehicle use and ownership.



# OUR MANAGEMENT APPROACH TO

## PERSONAL MOBILITY



GM envisions a future where we can enjoy the benefits of vehicle use—freedom, convenience and comfort—while minimizing risks such as crashes, congestion or pollution. We are working on the technologies that will make this future possible, blending global insights with local market expertise as the automotive industry transforms from a traditional manufacturer of goods to a provider of services that delivers new ways of thinking about transportation.

Over the past decade, GM has built a strong leadership position in vehicle electrification and connectivity; and in the past 18 months, we have been rapidly building a similar position on autonomous and shared vehicles, with 180 vehicles in our autonomous test fleet and a new shared mobility platform that is experiencing rapid growth.

### KEY TAKEAWAYS

- > GM aims to broaden its perception among customers from an automaker to a mobility solutions provider, helping them move from point A to point B in a variety of ways.
- > Autonomous vehicle technology has the ability to provide numerous societal benefits such as increased road safety, reduced traffic and reduced pollution.
- > Automation and electrification technologies are inextricably linked; at GM, we believe that all AVs must be EVs.
- > Through our Maven sharing platform, we are attracting people who seek a shared service model, rather than an individual ownership model, for personal mobility.
- > Connectivity is a critical enabler of new mobility solutions and emerging vehicle technologies, both of which have the potential to enhance safety, relieve congestion and improve fuel economy.

### *Our Autonomous Future*

The most significant change affecting modern mobility is the rise of autonomous vehicles (AVs). Autonomous driving is on the brink of disrupting the automotive industry, and GM is helping chart the course of that transformation. AVs will bring enormous societal benefits, the most visible of which will be dramatic increases in road safety. Consider that in the United States alone, nearly 40,000 people are killed and 2 million are injured on the roads each year. Human error is to blame for 94 percent of these injuries and deaths. By taking human fatigue, distraction and impairment out of the equation, we can save the lives of tens of thousands of drivers, passengers, cyclists and pedestrians.

AVs will save another precious commodity: time. The number of cars on the road—which currently lack connectivity to manage their flow—creates congestion, wastes time and costs money. The average American spends 42 hours in traffic every year, paying roughly \$1,400 for that fuel. Globally, we estimate that the economy loses roughly \$1 trillion per year in lost productivity due to people and goods being stuck in traffic. AVs will address these challenges by reducing the crashes that bring traffic to a standstill and will ease bottlenecks through technologies like platooning and adaptive cruise control.

GM is the right company to deliver the benefits of AVs. Unlike other companies who are retrofitting conventional vehicles with autonomous technology, or designing their own vehicles for the first time, GM brings expertise in automotive design, safety testing and proven quality methods refined over more than a century. We also have the manufacturing capacity and talent to bring AVs quickly to scale. In fact, in 2017 we became the first automaker to use mass-production auto assembly line methods for autonomous vehicles, and we remain the only company with this capacity.





*Chevrolet Volt.*

By 2030, the world is projected to have 41 megacities with more than

**10 million**  
INHABITANTS.

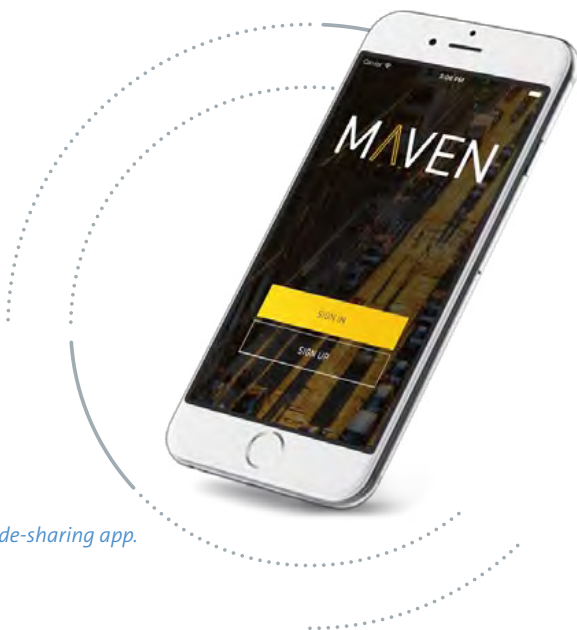
—United Nations World Urbanization Prospects

### *Powered by Electricity*

Every GM autonomous test vehicle is also an electric vehicle, with a design based on the Chevrolet Bolt EV. Introducing these technologies in tandem accomplishes multiple goals, including increasing acceptance of EVs and encouraging buildout of EV charging infrastructure. In addition, there are benefits to integrating AV technology into an EV — as opposed to a conventional or hybrid vehicle — from an engineering perspective.

### *Shared Value*

GM's autonomous electric vehicles also will be shared, a further reflection of the changing nature of transportation. The world's population, particularly in cities, is growing rapidly. By 2030, the world is projected to have 41 megacities with more than 10 million inhabitants. At the same time, we recognize that most privately owned vehicles spend most of their time unused—and ridesharing currently represents only a tenth of a percent of vehicle miles driven in the U.S. This presents opportunities to use vehicles more efficiently: decreasing the number of cars on the road, but increasing utilization rates of those that remain by more people riding in them. Taking this another step, when passengers choose to ride together in shared cars or shuttles, they increase efficiency and reduce congestion even further.



*Maven ride-sharing app.*

Our customers not only understand these benefits—they are demanding them. There is a new desire for transportation access that doesn't necessarily include ownership. Although car ownership will stay strong in large parts of the U.S. and around the world, people everywhere, and especially the growing population in urban areas, are clamoring for a different type of relationship with transportation. This shift provides us with a tremendous opportunity to offer personalized, premium, on-demand solutions that connect customers to the people, places and moments that matter to them. We are doing precisely that today through our Maven suite of shared mobility solutions. Other near-term innovations that bring together these breakthrough technologies may include a fully autonomous, electrically powered ride-sharing platform.



### *Leading in Connectivity*

Connectivity is a foundational enabler of a future that includes on-demand car sharing and autonomous vehicles. GM's two decades' experience building our OnStar in-vehicle safety and security service, and our diagnostic, navigation and connectivity services, makes us the most connected automaker on the planet. This sets the stage for deploying connected vehicle technology to improve safety and relieve congestion by allowing vehicles to communicate with one another and the infrastructure. Equally important, this has provided us with an understanding and appreciation that offering a vehicle with the latest technology is only meaningful when it is seamlessly integrated, as well as consistent and relevant to our customers.

Today, we are the most connected automaker in the world, with more than 14 million vehicles connected, accounting for 200 million daily interactions with customers.

Today, we are the most connected automaker in the world, with nearly 14 million vehicles connected, accounting for 200 million daily interactions with customers.

The freedom and opportunity that vehicles have provided the past 100 years has come with often adverse effects in the form of injuries, emissions and congestion. Now, transformative innovations—autonomy, combined with electrification, sharing and connectivity—are changing the nature of transportation and our relationships to the vehicles that move us. These innovations, in the hands of GM engineers and experts, are creating a historic opportunity to make personal mobility safer, better and more sustainable for customers around the world.



*Chevrolet 2017 Volt infotainment screen.*

# WHAT WE MEASURE

## PERSONAL MOBILITY

### Mobility Solutions



**104,000**

MAVEN MEMBERS



**17**

MAVEN U.S. CITIES

**230**

MILLION  
MAVEN MILES DRIVEN



**114,000**

MAVEN  
RESERVATIONS

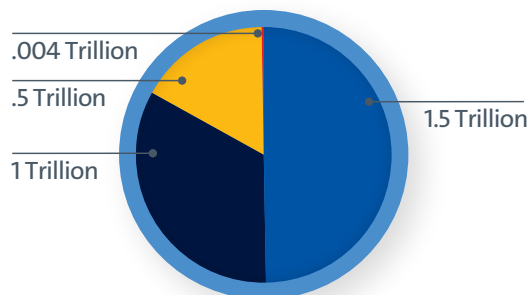
As of December 31, 2017

**5 million**

ALL-ELECTRIC MILES  
DRIVEN

#### U.S. Annual Total Miles Traveled

Urban/Suburban Rural Trucks/Commercial/Other Rideshare



*Ridesharing is currently only a tenth of a percent of vehicle miles driven in the U.S. offering significant new business opportunities.*

### Autonomous Vehicles

**180+**



AV TEST VEHICLES

**4**



AV TEST  
GENERATIONS

### 4G LTE Connectivity

**7 million**

4G LTE-EQUIPPED  
VEHICLES



**245,000**

CUSTOMER INTERACTIONS  
PER DAY

### OnStar

**4**



CONTINENTS

**7,000**



AUTOMATIC CRASH  
RESPONSE NOTIFICATIONS  
PER MONTH



**14 million**

MEMBERS SERVED





## ACTIONS WE ARE TAKING

### Provide Connectivity for Fleet Customers

GM has the most connected vehicles in the automotive industry, giving drivers access to navigation tools, vehicle maintenance information, safety services and more. We are extending the benefits of connectivity to our fleet customers with a suite of new technologies and partnerships that provide innovative solutions for fleet management.

These include a customized version of Spireon's FleetLocate tool that allows fleet operators to better manage their Chevrolet, Buick, GMC and Cadillac vehicles. Spireon's solutions help fleet operators reduce fuel costs, idle time, labor, fleet mileage and maintenance-related downtime. These solutions can also help drivers identify and improve upon driving behaviors.

A strategic agreement with MapAnything, Inc., a leader in geo-productivity and intelligence for business, allows fleet customers to use telematics and customer relationship management (CRM) software to streamline routes and automate critical business processes. Vehicles can be dispatched and routed based on traffic data, and sales visits are automatically logged on the go, further increasing the efficiency of sales and field service representatives.

"Connectivity is the future for fleets of all sizes because the opportunities to help improve safety and reduce operating costs are so great. With 4G LTE technology and sophisticated software, we can deliver innovative business solutions that work for any customer." Ed Peper, U.S. Vice President, GM Fleet.



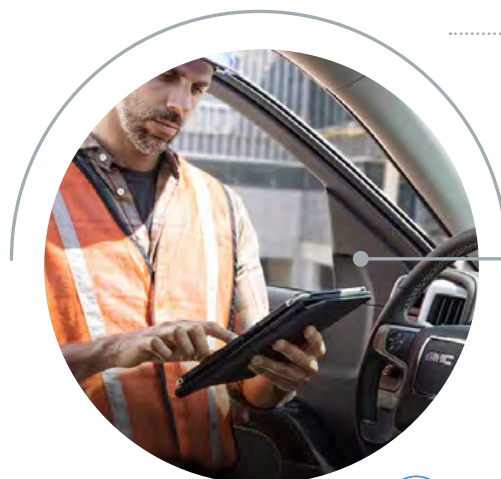
**10 million**

GIGABYTES DATA USED  
SINCE LAUNCH OF 4G LTE  
*EQUAL TO SENDING AND RECEIVING  
105 BILLION EMAILS WITH ATTACHMENTS*



**40+**

VEHICLE MODELS  
*MORE COMPATIBLE WITH APPLE  
CARPLAY AND ANDROID AUTO  
THAN ANY OTHER AUTOMAKER*



**50,000**

CONNECTED FLEET  
VEHICLES  
*SERVED BY A GM FLEET  
MANAGEMENT SOLUTION*



*Maven is collaborating with cities and municipalities to expand smart transportation options that aim to enhance mobility, create jobs and ease parking and congestion.*

## Redefine Car Sharing With Maven

A car of one's own is no longer the only ticket to independence. Due to factors ranging from a desire for more sustainable transit options to mass migration to urban areas, people are thinking about transportation in new ways that go beyond standard vehicle ownership. These drivers still rely on cars for a variety of purposes—but are getting behind the wheel with different needs and expectations than in the past.

Maven, General Motors' personal mobility brand, is a response to these changing behaviors and has evolved into one of the fastest-growing mobility brands in North America. Its mobile platform allows both individuals and businesses to access a fully connected fleet of GM vehicles on demand across the United States and Canada. As of the end of May 2018, Maven is now available in 17 cities, with recent expansions into Austin, New York City and Toronto.

The new cars come with technology that allows users to personalize the entire experience. Members bring their digital lives into the vehicles through Apple CarPlay® and Android Auto™. Maven advisor support is available through OnStar® for questions, roadside assistance and emergency response. SiriusXM™ and 4G LTE Wi-Fi™ allow for a more engaged experience.

Maven makes living car-free or car-light simple and convenient. Members can access vehicles with the capacity and features that meet their needs in the moment—whether for a few hours, a day, a week or a month. The platform consists of four key services:

- > **Maven City** is Maven's foundational service—a fully connected, seamless car-sharing experience featuring cars available for on-demand rental.

**Maven Home**, which is part of Maven City, is an exclusive car-sharing amenity for residential communities and commercial entities that provides members with 24/7 access to a variety of cars parked right at their building.

- > **Maven Gig** allows drivers in the sharing economy the freedom to switch between several brands, services and gigs—so they can earn money on their own terms.

- > **Maven Reserve**, the newest Maven offering, allows members to rent vehicles by the month, with access to a dedicated parking space for the duration of the reservation.



*Maven's first all-electric fleet of shared vehicles for freelance driving launched in Austin, Texas. Maven Gig vehicles are available for flat weekly rates that include the car, unlimited miles, insurance (minus deductibles) and maintenance.*



### Utilize Maven to Enhance EV Awareness

Maven has not only given thousands of members new ways to move; it has introduced GM's electric vehicles to a broad audience with Chevrolet Volts and Chevrolet Bolt EVs available on demand.

Bolt EVs have become among Maven's most-reserved vehicles, and are number-one for Maven Gig drivers in cities where they are available. Maven Gig Bolt EVs have driven approximately 13.20 million all-electric miles saving an estimated 732,000 gallons of gas. For a limited time, Maven Gig drivers are benefiting from free charging via the entire EVgo Freedom Station network throughout California.

Of particular note, drivers of these EVs show no signs of range anxiety. Maven Gig drivers in a Bolt EV travel, on average, 30 percent more miles per day than those in traditional internal combustion engine vehicles. Drivers have taken trips from San Francisco to Portland and from San Diego to Los Angeles. They drive, on average, more than half the vehicle range every day.

For Maven Gig members who drive for ride-hailing services like Lyft and Uber, Bolt EVs have offered an unexpected up side: an opportunity to connect with passengers. Drivers report that the EVs are conversation starters, with passengers asking questions about the Bolt EV and its features. Maven Gig Bolt EVs have carried some 643,800 ride-sharing passengers—for many, their first ride in an electric vehicle. This outcome is just one example of how GM's advanced mobility solutions can be mutually reinforcing: shared EVs are putting affordable, emissions-free mobility within reach of people who might not have otherwise had access to a vehicle. At the same time, they are helping increase awareness of EVs and their associated infrastructure.



### Deliver Luxury on Demand

For drivers who desire flexible mobility options but don't want to compromise on style, Cadillac has introduced BOOK by Cadillac, a first-of-its-kind luxury vehicle subscription service. For a monthly fee, members get access to a variety of Cadillac vehicles with no long-term commitments and can request, return or exchange vehicles to suit their needs.

Vehicles are delivered by concierge to the location of members' choosing, giving them the freedom to get on the road anytime, anywhere. The curated selection of 2017 and 2018 vehicles includes the CT6 Plug-In with Super Cruise, the first true hands-free driving system for the freeway. BOOK by Cadillac is currently available in Dallas, Los Angeles and New York City, with plans to expand to other cities.



**We are committed to bringing Bolt EVs to all Maven Gig markets. Drivers want the Bolt EV because of cost savings as well as helping with energy and environmental goals. The freelance economy is growing, and Maven Gig is growing along with it to provide transportation solutions for freelance drivers."**

Megan Stooke, Chief Marketing & Growth Officer, Maven





### Solutions for Cities

EVs' popularity among Maven members has provided valuable insights for GM—as well as for cities interested in solving problems ranging from lowering emissions and congestion to improving mobility in “transit deserts.” For example, while there are approximately 200 fast chargers for EVs in Los Angeles and San Francisco, Maven data reveals that customers regularly use only about 20 of them. This sort of information on usage patterns can be shared with city leaders to help drive the intelligent build-out of EV infrastructure.

For example, Maven usage patterns are helping guide infrastructure and transportation developments as part of the City of Los Angeles' Sustainable City pLAn. We are working with infrastructure providers on building a more effective, robust EV charging network, as well as partnering with each of California's investor-owned utilities and the Los Angeles Department of Water & Power on infrastructure projects that can encourage the use of EVs in the sharing economy. Maven plans to collaborate with additional cities to advance the development of future applications, including a fully electric autonomous network of vehicles tied to mass transportation stations.



### Engaging Cities on Autonomous Public Policy

Across the country at the state and federal level, regulators and legislators are actively considering how to help foster and shape the evolution of autonomous vehicles. GM is committed to being a full-fledged partner to policymakers in this process. In particular, we are focused on discussing our mobility offerings with cities across the U.S. and around the world, as the leaders of these cities will be instrumental in helping us plan for the future of mobility.

One of the many ways GM is engaging with cities is through participation in CityLab, a global gathering of more than 500 mayors, urban experts, business leaders, artists and activists worldwide. At CityLab 2017 in Paris, Mike Ableson, Vice President of Global Strategy, and Harry Lightsey, Executive Director of Emerging Technologies Policy, shared GM's commitment to transforming transportation and creating a safer, more efficient future.





### Scale Production of Autonomous Vehicles

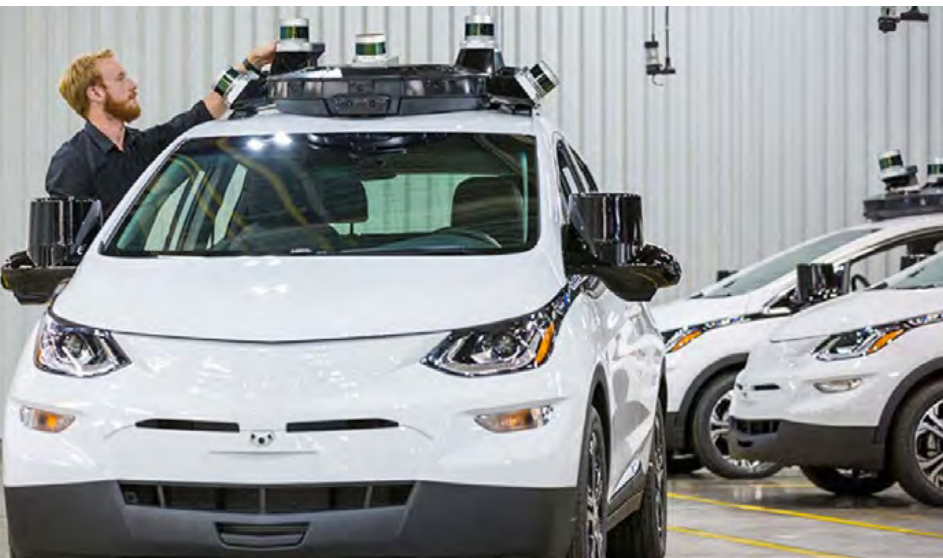
GM is making fast progress toward our goal of putting autonomous, electric vehicles within reach of rideshare customers. In 2017, we became the first company to assemble self-driving test vehicles in a mass-production facility, with 130 of our third-generation Chevrolet Bolt EV test vehicles rolling out of our Orion Assembly Plant.

The vehicles draw upon technology from across GM's vehicle portfolio. As an example, our test AVs use the same kind of long-range radar that our 2018 Cadillac CT6 Super Cruise technology uses. In addition, radiators, fans and other cooling systems from the Chevrolet Volt and Bolt EV control the temperatures of all AV electronics. At the same time, the test vehicles contain new designs that optimize them for sharing. Interior design changes, such as the design of the center console, make it easier for rear passengers to get in and out of the back seat—vital for a ride-sharing environment in urban areas.

Strategic acquisitions have made this rapid innovation possible. Cruise Automation, which is owned by GM, is pairing its expertise in autonomous technology with GM's manufacturing scale, allowing us to develop three generations of self-driving test vehicles in just 14 months. A typical vehicle refresh, by comparison, can take up to 20 months to complete.

With the 2017 acquisition of light detection and ranging (LiDAR) developer Strobe, Inc., we're gaining even more speed. LiDAR uses light to create high-resolution images that provide a more accurate view of the world than cameras or radar alone. It can even outperform the human eye in challenging situations such as detecting obstacles in the dark or when the sun is low in the sky or reflects off wet pavement. As self-driving technology continues to evolve, LiDAR's accuracy will play a critical role in its deployment, significantly improving autonomous vehicles' cost and capabilities.

Based on our current rate of development, we expect to have an autonomous ride-sharing fleet on the road by 2019. As this fleet is deployed, we expect its driving capabilities to accelerate quickly. Safety will remain our top priority and guide our actions as we work toward a mission of deploying driverless vehicles at scale.



*Cruise AV test vehicle.*



*A steering wheel light bar and cluster icons indicate the status of Super Cruise™ and will prompt the driver to return their attention to the road ahead if the system detects driver attention has turned away from the road too long.*

## Lead the Industry With Intelligent Vehicles

The automotive industry is speeding toward the introduction of vehicles that are more intelligent and connected, and the 2018 Cadillac CT6 is leading the way with Super Cruise, the world's first true hands-free driving system for the freeway. Super Cruise is available on over 130,000 miles of limited-access freeways across the United States.

When a vehicle enters one of these freeways and meets other conditions (see sidebar), the driver may activate Super Cruise and remove their hands from the steering wheel. A green light bar on the top of the wheel indicates that Super Cruise is steering. Proprietary head tracking software helps ensure that drivers' eyes remain on the road when Super Cruise is in control. If the system detects that the driver is not paying sufficient attention, the green bar will begin flashing. If the driver does not redirect his or her eyes to the road, Super Cruise will alert the driver to take control with additional vibrations and alerts. Continued failure to take control of the vehicle will disengage Adaptive Cruise Control and Super Cruise; lock out Super Cruise until the next ignition cycle; and gradually cause the vehicle to slow to a stop, turn on the brake lights and hazard warning flashers, and contact an OnStar Advisor.

Provided drivers remain attentive, Super Cruise acts like an enhanced version of Adaptive Cruise Control, allowing the driver to travel for hours without touching the wheel or pedals and making long drives and commutes more comfortable and convenient. It doesn't just pay attention to drivers; Super Cruise is also highly attuned to freeway conditions, including toll plazas and lane splits. Cadillac partnered with mapping company Ushr to chart 130,000 miles of freeways. This map data, combined with cameras and vehicle sensors, allows vehicles to both respond to real-time road conditions and anticipate what's ahead.

Cadillac demonstrated the power of Super Cruise with the first official hands-free drive across the United States when 12 Super Cruise-equipped vehicles crossed 16 states, traveling from New York City to Los Angeles.



### Offering Safe Operation

Super Cruise technology provides benefits unlike anything drivers have experienced before—and it's also safe. It will deploy only when certain conditions are met:

- > The vehicle is on a limited-access freeway
- > Adaptive Cruise Control is on
- > The Forward Collision System is set to: ALERT and BRAKE
- > Teen Driver is not active
- > Camera or radar sensors are not covered, obstructed or damaged
- > Lane markings are not obscured by glare or poor weather conditions
- > In-vehicle cameras determine that the driver is attentive

If any of these conditions change—for example, if the vehicle exits the freeway—Super Cruise will alert the driver to take control and then disengage.

*The 2018 Cadillac CT6 featuring Super Cruise is the industry's first true hands-free driving technology for the highway.*



### Align and Optimize Cybersecurity Management

Management of cybersecurity is a long-established priority for General Motors. The continued evolution of connected car technologies, the expansion of the vehicle ecosystem and advent of autonomous driving capabilities elevates cybersecurity concerns to another level of complexity and risk. In recognition of these developments and their potential impact on our business, GM has implemented a new cybersecurity governance structure at the highest levels of the company.

Oversight responsibilities for cybersecurity programs and risks now lies with the GM Board of Directors, which has created a Cybersecurity Committee. Specifically, this group oversees the practices, procedures and controls management used to identify, assess and manage key cybersecurity programs and risks; the protection of the confidentiality, integrity and availability of GM electronic information, intellectual property and data; and the protection of the safety and privacy of GM customers, as it relates to connected GM products and the connected ecosystem. The Committee's charter was adopted at the end of 2017.

Further, in early 2018, cybersecurity management was placed with a newly created Global Cybersecurity organization that encompasses both product and corporate cybersecurity functions across all areas of the business. This newly centralized organization, headed by the Vice President of Global Cybersecurity, will provide an enterprise-wide view of cyber risks and threats to augment the company's ability to defend, detect and respond to them. It's a holistic approach with several specific focus areas, including autonomous vehicles and their development, customer smartphone apps, manufacturing automation and the operations of GM Financial and OnStar. The goal is to align cyber efforts cross-functionally across the company to achieve harmonization and optimization.

Moving forward, Global Cybersecurity will be engaging regularly to develop collective strategies in the areas of joint ventures and alliances, risk management, governance and policy, companywide monitoring, physical security, government regulation and data analytics in an ecosystem that is constantly evolving.

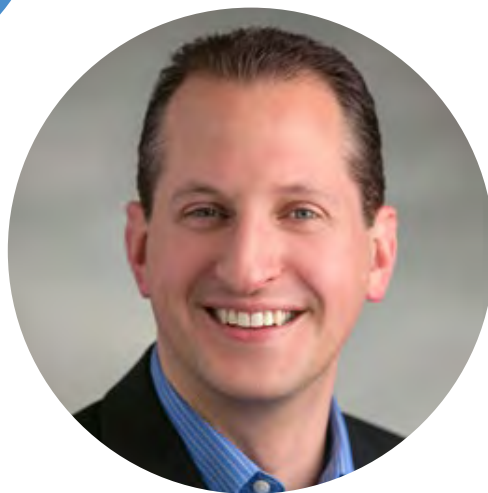




### How We Are Ensuring a Cyber Secure Future



A CONVERSATION WITH JEFF MASSIMILLA,  
VICE PRESIDENT—GLOBAL CYBERSECURITY



**Q** How does the newly created cybersecurity team interact with product development?

**A** General Motors has reengineered its vehicle development process to include cybersecurity considerations from the earliest stages of vehicle design. This means we are designing cybersecurity into our vehicles from the start, rather than working solutions into our cars and trucks once they're built. GM will not introduce any technology into its vehicles until it meets our rigorous cybersecurity standards. We are taking a multilayered approach to in-vehicle cybersecurity and are designing many vehicle systems so that they can be updated with enhanced security measures as potential threats evolve.

**Q** What role does your team play in ensuring the cybersecurity of autonomous technology versus the development team at Cruise Automation?

**A** The evolution of personal mobility, including enhanced vehicle services, autonomous technologies, ride sharing platforms and electric propulsion, bring unique cybersecurity, OTA, privacy and data considerations. We have a dedicated team of specialists focused on the cybersecurity strategy for autonomous vehicles. Members of that team are located in metro Detroit and with Cruise Automation in California, and are fully aligned with GM's product cybersecurity team and strategy.

**Q** How are you communicating and increasing awareness of cybersecurity among GM's global workforce?

**A** GM takes cybersecurity very seriously, and we work diligently to protect our customers, employees, their vehicles and their data. As part of the mandatory training requirement for employees across the globe, we have created a training course (course #53429) focused on cybersecurity to be taken annually. Some country-specific exceptions apply to how 'required' we can make a course.

**Q** What sorts of systems are in place to manage data breaches that involve customer data?

**A** In addition to the cybersecurity training and other awareness efforts, GM utilizes multiple tools to monitor and prevent data breach. GM has a tested and proven Personal Information Security Incident program that leverages the cross-functional expertise of our IT, legal, communications and policy teams to ensure that any data loss is contained and remediated quickly; and our customers are properly informed of the situation and how it might impact them.

**Q** How does GM help ensure that their customers' connected vehicles are secure?

**A** At GM, we are committed to safety in everything we do. GM protects the safety, security and privacy of our customers, their vehicles and their data through a robust product cybersecurity strategy. As vehicle connectivity continues to evolve, GM continues to strengthen cybersecurity protections. Our three-pillar approach employs defense-in-depth, monitoring and detection, and incident response capabilities to ensure our connected vehicles are secure.



# SUPPLY CHAIN

## ASPIRATION: POSITIVE ENVIRONMENTAL & SOCIAL IMPACT

WHAT WE ASPIRE TO: POSITIVE ENVIRONMENTAL & SOCIAL IMPACT .....	85
OUR MANAGEMENT APPROACH TO SUPPLY CHAIN .....	86
WHAT WE MEASURE .....	90
ACTIONS WE ARE TAKING	
Help Eradicate Forced Labor .....	91
Honor Suppliers for Innovation, Quality and Dedication .....	91
Commit to Sustainable Natural Rubber for Tires .....	92
Set Industry Standards for Suppliers .....	93
Build Strong Supplier Relationships .....	93
Q&A: Spur Innovation Within Our Supply Base .....	94
Continuously Improve Supplier Audits .....	95
Engage Suppliers Through CDP .....	95
Manage Raw Material Supply Chain Risks .....	96
Q&A: Gain Visibility Into an Interconnected Supply Chain .....	97



## SUPPLY CHAIN: ASPIRE

### WHAT WE ASPIRE TO:

#### POSITIVE ENVIRONMENTAL & SOCIAL IMPACT

In order to build the most valuable automotive company, we must recognize that our impacts go beyond the walls of GM to include our entire value chain, of which suppliers make up a significant part. The importance of strong supply chain management and relationships is further underscored as new issues arise due to business expansion into emerging markets and increased participation in more advanced technologies, such as electricity-powered vehicles. We seek to partner with suppliers who share our purpose and values. We expect our employees working with suppliers to hold them accountable to the same environmental principles and ethical standards to which we hold our own employees and operations—so we all win with integrity.



# OUR MANAGEMENT APPROACH TO

## SUPPLY CHAIN



GM's supply chain  
spans over

**20K**

BUSINESSES  
around the world

GM's supply chain spans over 20,000 businesses around the world. We spend approximately \$100 billion—two-thirds of our automotive costs—on about 200,000 items representing a wide variety of raw materials, parts, supplies, freight, transportation and other services. These are delivered or provided to more than 150 manufacturing operations in 30 countries. Despite its great breadth, scope and complexity, we've found that working with our suppliers to improve our mutual performance leads to rapid and significant improvements in our overall impacts.

As an example, life cycle analysis reveals that greenhouse gas (GHG) impact is 10 times greater in our supply chain than in our own operations. By working with suppliers to reduce their own GHG emissions, we are able to reduce overall impact.

Our supply chain is built on strong, transparent and trusted relationships, which are critical to ensuring product quality, availability and affordability for our customers. By seeking to be the partner of choice to suppliers, GM is better positioned to:

- > Develop transformative transportation solutions for industry, environmental and societal challenges.
- > Accelerate innovation to bring the newest technologies and innovations to customers.
- > Improve our business competitiveness.
- > Lower or mitigate business risks.
- > Eliminate waste from value streams and deliver defect-free vehicles.
- > Address human rights issues.

GM committed in recent years to work toward exemplary supplier partnerships built on integrity and shared values.

### *Supply Chain Governance*

Our Senior Vice President of Global Purchasing and Supply Chain (GPSC) is a member of GM's senior leadership team, which drives the company's strategy. This leader is responsible for working with suppliers to accelerate innovation, eliminate waste and deliver superior financial performance, while ensuring that supply chain standards are defined and understood.

## KEY TAKEAWAYS

- > Though GM's supply chain is vast and complex, we are able to improve mutual performance by working effectively with suppliers and collaborating across our industry.
- > We seek to be a partner of choice to suppliers to develop transformative transportation solutions, accelerate innovation, improve competitiveness, eliminate waste, improve quality and address human rights issues.
- > Our Supplier Code of Conduct and supplier contracts set forth expectations for ethical social, business and environmental practices; our major suppliers must certify compliance.
- > Supply chain management challenges include visibility beyond Tier I suppliers and striving for a sustainable and socially responsible supply chain without adding more complexity and burdens to supplier relationships.
- > Supply chain localization lowers risks, increases flexibility and improves business competitiveness.



*GM promotes shared growth with its suppliers.*

GPSC is reshaping how the company and its suppliers work together, partner for mutual success and deliver greater value for our customers. Priorities for this group include:

- > Accelerating innovation
- > Bringing a total enterprise approach to cost
- > Achieving waste-free value streams
- > Delivering defect-free vehicles
- > Nurturing supplier relationships
- > Enhancing a culture of safety

GPSC has two primary forums for formal supplier engagement. The GM Supplier Business Council consists of 12 global suppliers who meet monthly with our GPSC leadership team. In addition to our Supplier Business Council, we also have a Diversity Council that is comprised of seven companies. The second forum is a global GM Supplier Business Meeting that we webcast to our suppliers several months out of the year to gain input and a consensus approach on GM-specific topics. Suppliers who participate in this webcast represent approximately 80 percent of our annual purchases for parts and services. This group also meets in person once a year. In addition, we have a dedicated internet portal for our suppliers to facilitate discussions on important issues, including policies, guidelines, standards and even our Sustainability Report.

### **Supply Chain Compliance**

We also place high expectations of excellence and ethical conduct on our suppliers, who are expected to act in a way that is consistent with our principles and values. Likewise, GM employees must hold suppliers they work with accountable for acting in a manner that is consistent with our Code of Conduct, Winning with Integrity.

Beyond our Supplier Code of Conduct, we outline our expectations for supplier conduct in purchase contract terms and conditions, which clearly state our prohibition against any use of child labor or any other form of forced or involuntary labor, abusive treatment of employees or corrupt business practices in the supplying of goods and services to us. Furthermore, our contracts lay out expectations for lawful compliance with data protection and privacy, wages, hours and conditions of employment, subcontractor selection, discrimination, occupational health/safety and motor vehicle safety. By choosing to do business with GM, our suppliers accept our



*China launches 2017 Green Supply Chain project.*



terms and conditions which include our Supplier Code of Conduct, and for our largest suppliers we also expect that they annually certify compliance with these provisions of our contract. We follow up with those suppliers who do not confirm compliance. We also provide our suppliers with access to the same communication tools—the GM Aware Line, Speak Up for Safety, Global Response Incident Reporting and others—that our own employees use to raise concerns.

Compliance within our supply chain is mandatory. When suppliers act responsibly, we reward them with greater business opportunities. Conversely, when suppliers act in a noncompliant manner, they may lose current work, future opportunities and/or their contract can be terminated. We monitor and receive feedback on supplier performance through various tools such as Strategic Supplier Engagement and supplier business review meetings. Our Supplier of the Year program recognizes best performers.

Across the globe, we hold various workshops and provide external training to improve supplier operations, primarily in the areas of efficiency, environmental management, workplace conditions, ethics and human rights.

We require our direct or Tier I suppliers on a global basis to also require their direct suppliers to meet in-country environmental and safety standards, as well as quality standards. However, visibility into supplier relationships, especially at lower levels of the supply chain, is a challenge. We are working to better understand how to manage the risks associated with a multitiered supply chain and continue to collaborate with others in the industry to improve these areas.



*Direct or Tier I GM suppliers must require their direct suppliers to meet in-country environmental and safety standards, as well as GM quality standards.*

### **Supply Chain Risks**

GM's approach is to drive tiered supplier visibility as the key to moving from a traditional reactive crisis management approach to one of proactive crisis avoidance. Over the past few years, we have developed a robust in-house, customized supply chain visibility tool, which integrates GM plants, Tier 1 suppliers, known Tier 2 suppliers and logistics nodes. This tool gives us the capability to map the geographic locations and relationships across the GM supply chain. The tool also incorporates 24x7 monitoring—Global Incident Mapping (GIM)—of potential disruptive events that could impact our supply chain partners worldwide. Our Global Crisis Management approach has significantly improved the response to disruptive events in the supply chain through using innovative tools and real-time data analysis. We monitor for both catastrophic events (earthquakes, hurricanes) and isolated disruptions (factory fires, labor strikes), reporting all potential impacts to our Command Center's Global Crisis teams for supplier follow-up. This approach supports zero production losses keeping material pipelines full, reduced premium transportation, alternative supply allocation planning and overall protection of supply for foreseen risks. We also provide risk scores to the Purchasing team, which are factored into the sourcing process and support mitigation plan development for high-risk areas.

Supply chain risks are also managed through our broader enterprise risk management functions and processes. All enterprise-level risks are assessed, updated and reviewed by senior leaders at least twice a year. Within our Strategic Risk Management team, we utilize and offer a variety of decision-support tools, such as war gaming, game theory, scenario analysis, stress testing, sensitivity analysis and lessons-learned analysis. These techniques are applied across risk, functions and regions.

### **Industry Collaboration**

An ongoing challenge for us is striving for a sustainable and socially responsible supply chain without adding more complexity and burdens to our supplier relationships. Collaboration among auto manufacturers makes sense, particularly given the level of common suppliers among the major automakers. This approach also helps ensure that automotive suppliers are not overburdened by duplicative OEM efforts and have a shared





understanding of the key issues up and down the supply chain. GM works closely with many industry and supply chain-focused organizations, including the Automotive Industry Action Group (AIAG), the National Institute of Standards and Technology (NIST), iPoint and the International Automotive Task Force (IATF).

Industry collaboration groups are a primary forum for developing and sharing responsible supply chain practices across other automotive OEMs, Tier I and sub-tier suppliers. For example, in the U.S., GM employees maintain leadership positions in AIAG, provide direct financial support to the organization and leverage our sponsored membership program to enable free membership for small sub-tier suppliers. This allows key information and tools such as responsible supply chain training materials, self-assessments, best practices and standards, currently available to Tier I suppliers, to cascade to the sub-tier supply base. Each tier is responsible to ensure that their sub-tiers have compliance programs. We also require all of our supplier quality employees who visit supplier facilities to take AIAG training regarding responsible working conditions, including child labor.

GM was an active participant in the development of the AIAG's Guiding Principles to Enhance Sustainability Performance in the Supply Chain. These principles target the entire automotive supply base. GM's director of sustainability represented the company on the AIAG Corporate Responsibility Steering Committee and contributed to the development of the principles, which in turn were communicated to GM suppliers.

In addition, very specific requirements regarding responsible supply chain practices have been added to the new IATF 16949 Quality Standards. These requirements include:

- > An employee code of conduct
- > An anti-bribery policy
- > An anti-retaliation whistle-blowing process

This was the result of global industry collaboration between several standard-setting bodies, OEMs and Tier I suppliers. Compliance to the IATF 16949 is a requirement for GM suppliers. Our corporate goal is for 100 percent of our direct suppliers to be compliant by the end of 2018 and we are on track to meet this goal. Currently 37 percent of our direct suppliers are certified compliant to IATF 16949 standards.

### *Localization*

Localization is another important tenet of our value chain. When we build where we sell, and buy where we build, our vehicles are more competitive because they enjoy pricing benefits and can be built to suit unique local requirements that drive customer enthusiasm and brand loyalty.

Localization also lowers risks by increasing the flexibility of our supply chain to respond to disruptions caused by natural, political or other causes. Furthermore, when we work with local suppliers, we also support the local economies of communities where we operate and realize environmental benefits by helping to minimize shipping, thus reducing fossil fuel use, carbon emissions and material use. GM works cross-functionally through its product development activities, sourcing activities and logistics planning to maximize the benefits of localization.

## WHAT WE MEASURE

### SUPPLY CHAIN

**\$100 billion**

Approximate Annual Supply Chain Spend

**20,000**

Global Suppliers

**200,000**

Approximate Items and Services Purchased

**35%**

Tier I Suppliers Assessed at Manufacturing Site Level

**3%**

Tier I Suppliers Identified as Critical

**100%**

Supplier Contract Templates That Include ESG Factors

**838**

GM Employees Receiving Sustainability and Working Conditions Training

**3rd**

Ranking in 2017 Planning Perspectives Inc. Supplier Relations Study

**744**

Supplier Employees Completed Automotive Industry Action Group Training

**1,784**

Safety-Specific Audits Conducted

**3rd**

Ranking in North American Automotive OEM Supplier Working Relations Index

#### CDP Supply Chain Initiative

**214**

Participants

**23 million metric tonnes**

Reduction in GHG Emissions

**\$140 million**

Savings from GM Supply Chain activity, including logistics

#### Local Sourcing

**85-90%**

North America

**80-85%**

International and South America

**95%**

China

#### Supplier Diversity

Tier 1: **\$3.4 billion**  
Tier 2: **\$2.6 billion**  
Spending With Diverse Suppliers

#### Conflict Minerals

**4,400**  
Reporting Supplier Locations

**118**  
Smelters and Refiners Asked to Join Responsible Minerals Assurance Process



## ACTIONS WE ARE TAKING

### Help Eradicate Forced Labor

Migrant workers across the world face many dire challenges, including being forced to pay fees or surrender travel documents in exchange for a job. The practice traps people in a form of modern-day slavery. GM is addressing the issue by updating our supplier code with a “no-fees” recruitment policy throughout our supply chain. This means that suppliers cannot charge recruitment fees to employees or seize travel documents and must provide employees with clear written contracts. We drafted the new standards in line with best practices developed by the Interfaith Center on Corporate Responsibility, a coalition of faith and values investors, with whom we engaged on the issue.



### Honor Suppliers for Innovation, Quality and Dedication



Our suppliers allow us to deliver the products, services and experiences our customers expect. They are also helping us provide the next generation of transportation solutions with innovations that provide electrification, make our vehicles lighter and more efficient, and make use of advanced materials and techniques. Suppliers such as LG Chem and LG Electronics, Inc., helped integrate a 60-kWh, lithium-ion battery pack in the award-winning Chevrolet Bolt EV, while Magna Exteriors developed a multiaxial laser cutting and welding process on painted thermoplastic, enabling lighter weight design of the 2017 Chevrolet Camaro XL1 fascia. These companies were among 118 of these global suppliers we celebrated at our 25th annual Supplier of the Year awards ceremony.





## Commit to Sustainable Natural Rubber for Tires

Tire manufacturing consumes three-quarters of the world's rubber. And much of that rubber comes from Southeast Asia, including areas along the Mekong River where unsustainable harvesting practices can lead to deforestation and where there is a significant risk of human rights violations.

To help address these negative outcomes, GM has made an industry-first commitment to sourcing sustainable natural rubber for the tires we buy, sending a strong demand signal and setting an example of leadership for our entire industry. Working with partners including Michelin and the World Wildlife Fund, GM hopes to develop a road map that ensures the rubber we purchase does not contribute to deforestation and is not aligned with unethical business or labor practices. We also aspire to support education about sustainable farming and foresting practices in the Mekong region.

GM is working with suppliers such as Bridgestone, Continental, Goodyear and Michelin to develop appropriate transparency into natural rubber and ensure its traceability throughout the supply chain, and we are encouraging other automakers to join with us in this effort. In early 2018, we co-led with CSR Europe a workshop that brought together representatives from automotive companies, tire manufacturers, NGOs and chambers of commerce worldwide to discuss ways to build alignment regarding sustainable natural rubber. GM expects these informal alliances to become more structured in the near future, particularly after the release of the World Business Council for Sustainable Development's platform proposal on the subject.

### Automotive Rubber Facts

**49  
MILLION**  
TIRES PURCHASED  
ANNUALLY BY GM



**5X**  
INCREASE IN  
MEKONG REGION  
TREE LOSS  
BETWEEN 2001 AND 2014

**75%**  
WORLD'S NATURAL  
RUBBER USED  
IN AUTOMOTIVE  
INDUSTRIES

**90%**  
GLOBAL  
RUBBER SUPPLY  
ORIGINATES IN  
SOUTHEAST ASIA

### Eyes on Sustainable Supply Chain

One good thing leads to another. As we develop solutions for sustainable rubber, we also have our eye on other supply chains. The intent is to leverage sustainable rubber to increase the sustainability of supply chains for other raw materials, such as leather used in vehicle interiors. Manufacturers are devising ways to produce leather more sustainably, as well as developing leather alternatives that offer similar levels of luxury and comfort. As this issue evolves, GM intends to be part of the conversation.



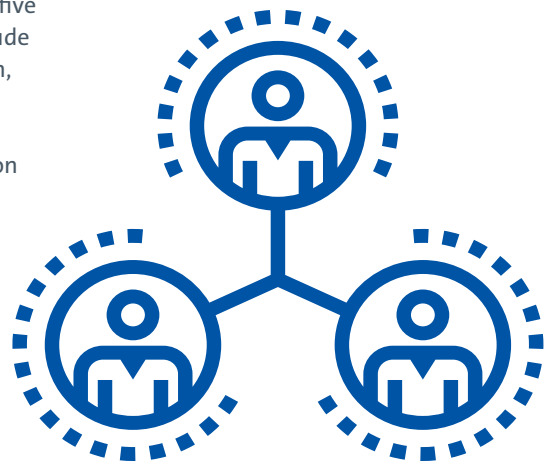
## Set Industry Standards for Suppliers

Industry collaboration and partnerships, such as the Automotive Industry Action Group (AIAG) are among our primary means of identifying and addressing risks in the supply chain.

As part of this collaboration, for example, we helped develop an AIAG supply chain responsibility training program and work with other OEMs to fund regional supplier workshops on supply chain sustainability and working conditions. In 2017, we served on the steering committee and helped to develop to an updated version of the Automotive Industry Guiding Principles to Enhance Sustainability Performance in the Supply Chain. The revised text encompasses current industry concerns regarding ethics, human rights, working conditions and environmental issues such as air quality and responsible chemicals management. With GM and other OEMs' help, AIAG also published Global Automotive Sustainability Practical Guidance, a supplementary text designed to help suppliers understand the practicalities of meeting the auto industry's expectations.

## Build Strong Supplier Relationships

GM rose to third place in the 2017 North American Automotive OEM—Supplier Working Relations Index (WRI) Study, our highest level ever in the history of the survey. Our scores improved in all five areas that comprise the WRI ranking, which include OEM Supplier Relationship, OEM Communication, OEM Help, OEM Hindrance and Supplier Profit Opportunity. Good supplier relations are a key enabler of continued innovation in next-generation automotive technologies.





## Spur Innovation Within Our Supply Base



A CONVERSATION WITH STEVE KIEFER,  
VICE PRESIDENT—GLOBAL PURCHASING  
AND SUPPLY CHAIN



**Q** How would you describe the scale of your supply chain and its level of impact?

**A** Every year, GM sources nearly 100 billion dollars' worth of products and services from 20,000 global suppliers. Roughly 65 percent of our company's cost structure is reserved for purchased materials and the logistics involved in moving these materials around. While this scale creates considerable complexity in getting our supply base aligned with our priorities, it also means that we have the opportunity to have a greater sustainability impact as we encourage our suppliers to improve on different issues.

**Q** How would you characterize GM's vision for a responsible supply chain?

**A** Our ongoing goal is to create a common set of responsible supply chain expectations for all suppliers across our industry. This would minimize suppliers' costs to become compliant and allow everyone to better support sustainability without degrading profitability. Another important goal is building long-term supplier relationships. Based on our most recent supplier survey, relationships now are the best they've ever been. And we're finding that those relationships yield side benefits, whether it's bringing new technology to market more quickly or addressing critical sustainability issues.

**Q** What are the top priorities you're communicating to suppliers?

**A** Key values—like putting the customer at the center of everything we do, launching vehicles with the highest levels of quality and getting our people home safe every day—apply not just to GM employees, but also to our suppliers. We also strive to show suppliers the value we place on innovation. This innovation could take the form of products, processes or

more sustainable ways of doing things. We want our suppliers to bring their best ideas to GM. Our message to them is that we can get new technologies into production and create value faster than any other OEM can.

**Q** How do you engage with suppliers regarding environmental sustainability?

**A** The most important action our suppliers can take to improve sustainability is to mobilize their own supply bases. Our Tier I suppliers are responsible for only about 19 percent of our GHG emissions, while Tier II suppliers account for 33 percent. This means that we have a huge opportunity to impact the environment, not only through our own actions, but also by communicating our work down multiple tiers. We are becoming more disciplined about the deployment of our sustainability expectations, using self-estimate and self-declaration approaches along with collaboration through industry organizations like AIAG.

**Q** How does GM measure the strength of its supplier relationships?

**A** Beyond one-on-one conversations we have with suppliers, external rankings help us understand how we compare to our peers. We were proud to see our ranking improve 16 percent in the 2017 Planning Perspectives Inc. Supplier Relations Study, a well-known study that quantifies suppliers' working experiences with companies. Our standing increased to third place, our highest ever, and we improved more than any other automaker in the study. Another benchmark we pay close attention to is the Gartner Supply Chain list. We haven't cracked the top 25 yet, but are aspiring to getting there soon.





UAW Local 5960 member Byron Garrett demonstrates the safety of General Motors' first fully collaborative robot that is touch-safe for employees to work alongside without a safety cage. Replacing an ergonomically unfriendly job, the robot separates and stacks spare tires for Chevrolet Sonics and Buick Veranos. Plant management, union officials and safety representatives worked closely together to comply with all safety requirements and implement this cutting-edge technology.

## Continuously Improve Supplier Audits

GM conducted  
**1,784**  
SUPPLIER SAFETY AUDITS  
in 2017

Our development of a supplier auditing process has seen significant progress in recent years. Today, the foundation of this process is our Built in Quality System (BIQS), which helps standardize auditing practices and allows us to cascade quality standards through tiers of our supply base. We aim for all of GM Tier I suppliers to achieve BIQS Level IV, the highest level possible. BIQS compliance also compels these Tier I suppliers to uphold the same quality standards within their supply bases, since issues here can ultimately affect their quality performance.

Our vision is to ultimately include social and environmental criteria in BIQS audits. To this end, we recently added a safety module for in-person auditors to report. Their safety assessments check for a variety of safety practices from the use of personal protective equipment to air quality to parking lot

safety concerns. GM conducted 1,784 supplier safety audits in 2017. Our goal is to continue to improve and ultimately expand into human rights areas with a focus on child labor. IATF16949 is also going to look at ESG issues.



Paint shop team members put on Personal Protective Equipment (PPE) lint-free suits and hats that are required at all times in the paint facility. Each PPE is individually packaged and stored in a team member's locker.

## Engage Suppliers Through CDP

Using insights from our life cycle assessments, we engage with suppliers through CDP Supply Chain Reporting and Action Exchange for GHG Reduction. Quantification helps us prioritize Tier I impact and identify specific industries in other tiers where 5 percent of our total impact occurs. The following summarizes findings from this year's participants.

### SUPPLIERS REPORTING CLIMATE: 214

Percentage Involved in Carbon Reduction Activities	
Integrated climate change into business strategy	79%
Reported emissions-reduction initiatives	78%
Pursued active targets for carbon reduction	63%
Engaged Tier II and sub-tier suppliers	36%
Purchased renewable energy	34%
Reduced GHG emissions	30%
Collaborated on GHG reduction opportunities	29%
Pursued renewable energy target	16%

### SUPPLIERS REPORTING WATER: 117

Percentage Involved in Water Reduction Activities	
Pursued active targets for water reduction	88%
Integrated water into business strategy	84%
Reported progress against targets	74%
Have a companywide water policy	69%
Identified water reduction opportunities	59%
Assessed water risk assessment in operations	44%
Engaged Tier II and sub-tier suppliers	25%



*Chevrolet Volt lithium-ion battery.*

## Manage Raw Material Supply Chain Risks

### *Cobalt*

As electrification grows in importance to our vehicle portfolio, so too does the focus on cobalt, which is used in lithium-ion batteries. There are concerns around the use of child labor in the mining of this mineral, which would represent a serious violation of our Supplier Code of Conduct and terms and conditions in supplier contracts.

Through our membership in the Responsible Minerals Initiative (RMI), formerly known as the Conflict-Free Sourcing Initiative, we are working directly and actively on a cobalt sub-team in the following areas:

- › Developed a Cobalt Reporting Template based on the Conflict Minerals Reporting Template for suppliers to use in identifying cobalt refiners in their supply chain.
- › Defined “cobalt refiner” to help identify the choke points in the cobalt supply chain. This is driven by the limited number of known cobalt refiners. GM has conducted research on potential cobalt refiners and provided a list to the RMI team.
- › Requesting that cobalt refiners, as they are identified, complete the Risk Readiness Assessment, a self-assessment tool for minerals and metal producers used for assessing and communicating social and environmental risk in raw material extraction.
- › Conducting due diligence of GM Tier I suppliers to receive assurance from key suppliers of cobalt that responsible sourcing is a top priority.

### *Conflict Minerals*

The work we are undertaking in the cobalt supply chain builds off the practices we have established around conflict mineral sourcing. Annual SEC

disclosure of conflict mineral sourcing is fully integrated into our business processes. A dedicated team conducts due diligence, analyzes findings and reports conflict mineral information from our supply base that encompasses more than 4,400 supplier locations. Governance processes include a compliance committee of multifunctional GM leaders and an executive steering committee to provide leadership and direction for the program.

Beyond our own reporting activities, we work with our own supplier base regularly to increase education and awareness, including conducting periodic webinars and providing a dedicated email contact to answer specific questions. We continue to collaborate with others in the industry to educate suppliers. We co-chair the AIAG Conflict Minerals Work Group, which works on common automotive industry solutions with other OEMs and suppliers.

We are involved with several sub-teams within RMI, including the Smelter Engagement Team. If a smelter/refiner has not been validated as conflict-free (conformant to the RMI audit protocol), then GM sends letters to the smelters or refiners (SORs) to encourage them to participate in this third-party audit. To date, GM has sent letters to 118 smelters/refiners. To further encourage SORs to participate in the audit, GM has made contributions to the not-for-profit RMI Initial Audit Fund in 2017 and 2018. This fund is used to help offset the costs for the SOR to participate in the audit.

### *Mica*

We uncovered a risk of child labor in mining mica in India. We worked with and met face-to-face with our Tier I supplier. We stopped their sourcing from their supplier (our Tier II) until we had assurance that the issue was mitigated. Third-party audit results were reviewed as part of this risk mitigation. In addition, we are working collaboratively within RMI and other RMI member companies on this issue.



## Gain Visibility Into an Interconnected Supply Chain



A CONVERSATION WITH TOM RAMOS, DIRECTOR, GLOBAL LOGISTIC OVERSIGHT RISK AND COMPLIANCE



**Q** How is GM using technology to monitor risks in its supply chain?

**A** We recently began using a supply chain visibility and mapping tool that provides a visualization of GM's entire footprint, including our own facilities, our Tier I suppliers, and many of our Tier II suppliers. Using this map as a base, we can get answers to questions about supply chain risk by superimposing information like geopolitical events, hurricanes, water scarcity and other possible disruptions. With more than 200 incidents disrupting our supply chain every year, from earthquakes and floods to civil unrest and regulatory actions, it's easy to see why robust tracking and visibility tools are essential.

**Q** What process do you follow after identifying a potential risk?

**A** We have a dedicated team of employees who do nothing but conduct incident management across the globe, assessing thousands of alerts. When an incident is reported, this team determines whether the situation has the potential to affect GM's tiered network. If it does, the team notifies relevant members of our supply base. At the same time, local crisis teams in each region help to mitigate potential supply chain interruptions that could cause production losses.

**Q** What's an example of how this process works?

**A** The 2017 hurricane season was an excellent demonstration of the climate and weather-related risks we manage. Our tool has a dedicated storm tracking capability that allowed us to prepare for the aftermath of Hurricane Harvey before the storm even made landfall. We used National Weather Service data to track the expected path and intensity of the storm. By overlaying this

with our supplier tool, we could see which Tier I and Tier II suppliers, and even which specific part numbers, would be affected. As the storm matured, our crisis teams prioritized plant coverage for all parts, worked with Tier I suppliers to pull ahead shipments and encouraged them to do the same with their own suppliers. With these proactive efforts, we made it through the storm with no impact to production.

**Q** How does GM quantify a supplier's level of potential risk?

**A** There are two key metrics that we use. The first is a Location Risk Rating, which assigns a rating to suppliers based on their geographic location. If a buyer wants to source from a facility with a Red, or high-risk, rating, they must first establish a mitigation plan. The second metric is dependency, which focuses on understanding where our tooling is located, and which supplier locations supply which GM plant. This measure allows GM to better understand the impact a Tier I supplier disruption could have on GM's global manufacturing operations.

**Q** What future capabilities is GM building in supplier risk management?

**A** We are always looking to achieve deeper tier visibility. We recently began collaborating with a third party to identify supplier relationships deep within our tiered network and identify risks at an unlimited number of tiers. While we don't have financial relationships with suppliers multiple tiers deep, our goal is to understand where the supply base is located and what types of risks and issues may be occurring. We are also exploring tools that would monitor web and social media channels for potential issues that could affect our deep-tier supply base. Ultimately, we want to know what the emerging hot-button issues are, so we can act proactively.





# TALENT

## ASPIRATION: REALIZE EVERYONE'S POTENTIAL

WHAT WE ASPIRE TO: REALIZE EVERYONE'S POTENTIAL .....	99
OUR MANAGEMENT APPROACH TO TALENT .....	100
WHAT WE MEASURE .....	103
ACTIONS WE ARE TAKING	
Promote Employee Wellness and Balance .....	106
Enlist ERGs to Create Business Value .....	107
Empower Women to Lead .....	108
Encourage STEM Reentry .....	108
Share Wisdom From Powerful Women .....	109
Help Professionals Relaunch Their Careers .....	109
Recognize Others for a Job Well Done .....	110
Support Employees at Every Career Stage .....	110
Q&A: How GM Shares Their Values .....	111
Attract and Keep Top Talent .....	112



## TALENT: ASPIRE

### WHAT WE ASPIRE TO:

#### REALIZE EVERYONE'S POTENTIAL

In order to stay competitive and relevant as a company, we must attract and retain the brightest talent around the world. Today, we compete for that talent against other automotive companies and, increasingly, against businesses in other sectors such as technology. 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 also are mindful that our global customer base is diverse. Our global workforce must reflect that diversity and possess a diverse set of insights, skills and experiences in order to meet our customers' needs.

# OUR MANAGEMENT APPROACH TO

## TALENT



In 2016, a  
STEM hire was  
made every

**26**  
MINUTES

### *Talent Acquisition*

The hiring and retention of top talent is always a strategic priority and, increasingly, a challenging one. The current strong economy and heated job market mean that the best-qualified candidates are likely entertaining multiple job options. In addition, our increasing focus on technologies such as connectivity, autonomous and artificial intelligence, to name a few, requires us to compete not only against other automotive companies but leading companies from the technology sector, as well. We are competing effectively, as evidenced by our hiring an employee for a STEM position every 26 minutes, on average.

Our recruitment efforts are often the responsibility of internal talent acquisition teams, who we believe are best able to convey GM's strengths and stories in a personal, engaging way. We reach out to prospective employees via social media, and bring our purpose to life with the Made for More Employee Value Proposition.

*GM employees should feel inspired in their work environments and feel valued for doing their best work.*

Benefits that help new hires balance their jobs with other aspects of their lives increase GM's appeal. For example, our paid parental leave applies to all U.S. salaried employees, offering mothers, fathers and adoptive parents two weeks of paid leave in addition to the six to eight weeks allowed for birth mothers. We also are the only automaker to partner with SoFi to help eligible U.S. employees refinance their student loans. In addition, the Take 2 internship program for parents, caregivers and/or trailing spouses with backgrounds in engineering, manufacturing and other technical areas provides a valuable reentry point for individuals who have spent time out of the job market.

### *Talent Development*

Career development remains one of the top concerns for our employees around the world. We continue to increase the number and variety of career resources available to help employees grow their careers within GM. Formal performance management and individual tools for employees to use on their own are helping us address employee retention and development. Offering competitive benefits and promoting work-life balance further allows us to retain employees and enables the greatest possible returns on our investments in talent.

Our development process is available to employees at all levels, from new hires to senior executives. Crucially, this process is not prescriptive. We provide guidance and offer diverse opportunities, while encouraging employees to build skills and gain experiences that interest them most. We offer programs in partnership with academic institutions such as Harvard, Stanford and the University of Michigan. These programs bring new perspectives on matters such as creativity and design thinking that are preparing employees for emerging trends in our industry. GM-specific programs like JumpStart

## KEY TAKEAWAYS

- > We compete for talent and know that top talent is attracted to workplaces that are highly regarded and offer opportunities for career development.
- > Employee engagement is a key enabler of long-term business success.
- > Dimensions consistently demonstrated by best-in-class companies—teamwork, fairness, trust, growth, commitment, recognition and impact—are qualities GM cultivates every day.
- > Diversity and inclusion are integral to building a workplace of choice and supporting business success.
- > We respect our employees' right to collective bargaining, and we regularly engage with our labor union partners around the world.





*Fuel system validation engineer.*

for new hires and Crucial Conversations for people leaders remain popular and effective, building both on-the-job competencies and coaching on skills like communication and trust.

### *Talent Engagement*

GM's approach to employee engagement is simple: Generate a positive work environment to drive long-term success by creating a place where employees feel inspired to do their best work and feel valued for doing it. We strive every day to engage our employees in a meaningful way so that we may further instill our Purpose and Values into our global workforce. The GM Recognition program endeavors to make appreciation for others a part of employees' daily routines, using an online platform that allows employees to say thank you to their peers and leaders to provide rewards for outstanding work.

We know that top talent is attracted to companies that are recognized externally for being among the best or most admired in the world. Today, we are strengthening our corporate culture by giving GM employees five things they need, not only as employees, but also as individuals:

- > To be valued and to do valuable work.
- > To make their time count rather than to be counted.
- > To know that their leaders know how much effort their work takes.
- > To know what skills will keep them in critical roles or what roles are giving them critical skills.
- > To be provided with the truth behind business decisions and strategy rather than protection from change.

Our objective is to create a workplace of choice built on dimensions that are consistently demonstrated by best-in-class companies: teamwork, fairness, trust, growth, commitment, recognition and impact.

We measure engagement through our global Workplace of Choice survey, which includes both salaried and hourly workers. Results from our most recent survey, conducted in spring 2018, revealed that employee engagement is at an all-time high and above global averages.

### *An Inclusive Culture*

An integral part of GM's mission to build a workplace of choice is creating an inclusive culture that welcomes and celebrates a diverse workforce. Our employee surveys regularly reveal the high value that people at every level of GM place on diversity in the workplace, which is why we have established employee development programs that address both individual and business needs, as well as effective recruitment programs that reach out to diverse populations.

Not only do these wide-ranging outreach efforts help us build the type of workforce we all desire, but they also serve an important business purpose. A McKinsey & Company study found that most companies who are demographically diverse are far more likely to outperform their less diverse industry peers. We believe that our ability to meet the needs and expectations of an increasingly diverse and global customer base is tied closely to diversity and inclusiveness within.

To this end, we are focused on:

- > Finding and growing the best and brightest talent from around the world.
- > Capitalizing on new and emerging markets.
- > Leveraging the different traits and attributes inherent in our workforce.

GM has long been a global leader in advocating for women's equality in the workplace, with women in nearly 32 percent of our top management positions. We are signatories to the Equal Pay Pledge, which reflects the value we place on gender equity, our commitment



*Our ability to meet the needs and expectations of an increasingly diverse and global customer base is tied closely to diversity and inclusiveness within our teams.*

**69%**  
of our global  
workforce  
is represented by  
unions  
and covered by  
collective  
bargaining  
agreements

to fostering a diverse and welcoming workplace that values the contributions of all employees, and our shared belief that employees' protected categories, including gender, should not factor into compensation decisions. We believe that fair and equitable pay should be an essential element of any successful business model, and we are proud to stand with other companies that share this same value. In 2017, we conducted a gap analysis to identify any pay discrepancies. Where discrepancies were found, we made adjustments, and we continue to be committed to this work.

The GM Executive Leadership Team, chaired by our Chairman & CEO, serves as the company's senior diversity council. Other diversity-focused councils within our organization include the Supplier Diversity Council, Employee Resource Group Leader Council, Disabilities Advisory Council, Minority Dealer Development Council, Women Dealer Development Council, Eyes Right (Veterans Council) and the ERG Executive Champions Roundtable. Further, our Global Chief Diversity Officer chairs the Strategic Diversity Working Group, which aligns all D&I efforts globally and incorporates inputs from marketing, communications, corporate relations/philanthropy, talent acquisition, public policy and legal. In addition, GM's diversity initiatives are routinely reviewed with the executive leadership team and the Board of Directors.

### **Labor Relations**

We respect our employees' right to freedom of association in all countries and comply with our obligation to satisfy all local labor laws and regulations. GM works with about 29 unions globally, representing approximately 69 percent of our global workforce covered by collective bargaining agreements. GM's relationships with labor unions are generally healthy and stable business partnerships. Consistent with our respect for employees and their bargaining representatives, we have worked collaboratively with our union partners to realize significant increases in performance.

GM is a signatory to the United Nations Global Compact (UNGC), which calls upon companies to align their strategies and operations with universal principles on such matters as labor, human rights, the environment and anticorruption. As a UNGC signatory, GM agrees to uphold 10 Principles derived from the Universal Declaration of Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention Against Corruption. GM's participation in the UNGC underscores our confidence that we are operating in a consistent manner around the world to ensure the proper treatment of all employees.

The way we manage labor relations is evolving as the nature of unions and the interactions among them evolve around the world. We are increasingly working to share best practices and solutions among regions. As an example, our labor experts from our developed markets often mentor and advise labor personnel in emerging markets.

We manage our labor relations regionally, with a global focus. The labor relations responsibility is held with the global manufacturing leader, with partnerships that go to the highest level of the GM organization. Regular meetings are held with our union partners, starting with the CEO and the UAW Leadership meeting quarterly. Regional vice presidents of manufacturing enjoy face-to-face meetings with the unions when visiting the manufacturing sites globally, and plant managers around the globe discuss business issues on a daily basis with the local unions. All of these relationships assist in being able to make adjustments as needed due to schedules, economy swings or product decisions. As in all areas of our business, relationships are the key, and much time is devoted by GM Leadership to developing these relationships with our union partners.

# WHAT WE MEASURE

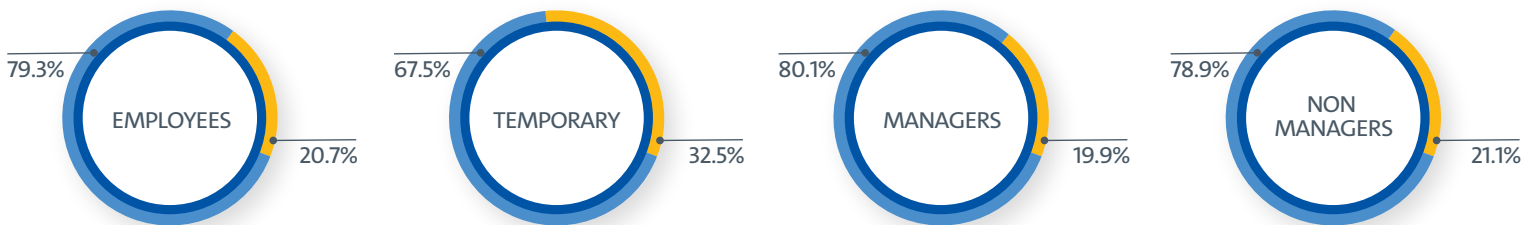
## TALENT

### Global Workforce Data

*Charts may not add to 100% due to rounding.*

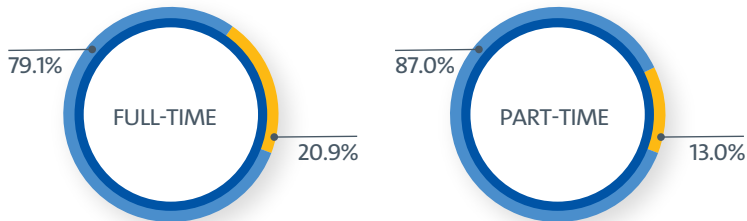
#### Global Workforce by Type

Men Women



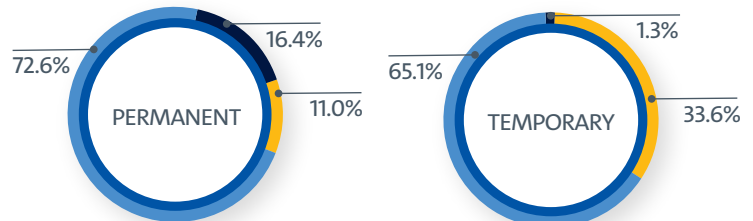
#### Employees by Employment Type

Men Women



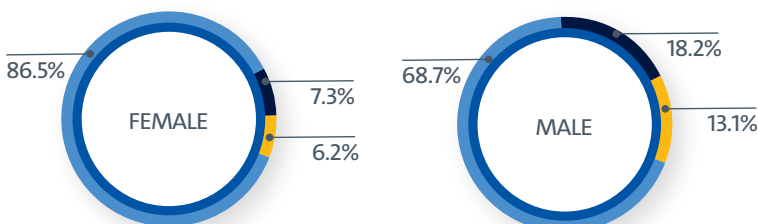
#### Employees by Employment Contract

North America International South America



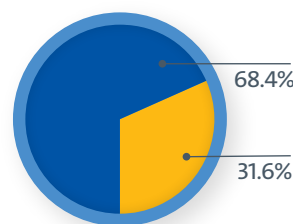
#### Global Workforce by Gender

North America International South America



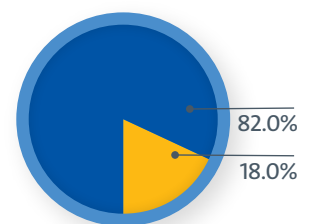
#### Top Management Positions

Men Women



#### Technology Positions

Men Women





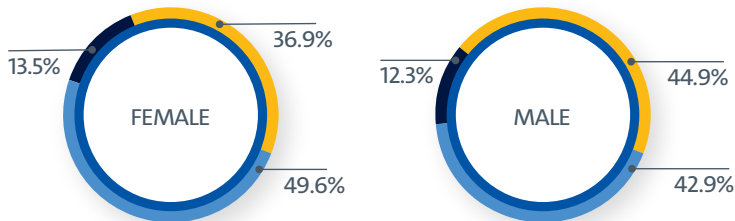


## TALENT: MEASURE

Charts may not add to 100% due to rounding.

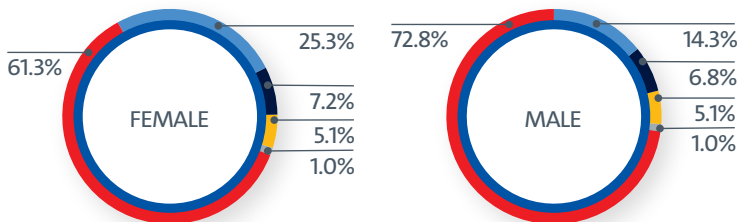
### U.S. Workforce by Age Group

■ Under 30 ■ 30-49 ■ 50 and over



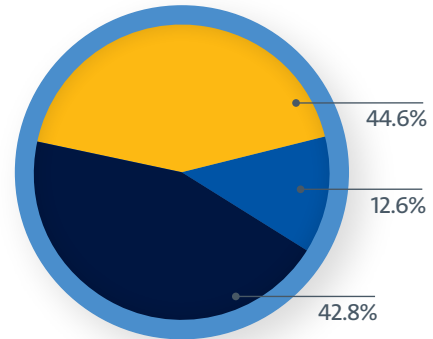
### U.S. Workforce by Ethnicity

■ White ■ Black ■ Asian ■ Latino  
■ NtHw/PcIsI/American Indian/Two or More Races



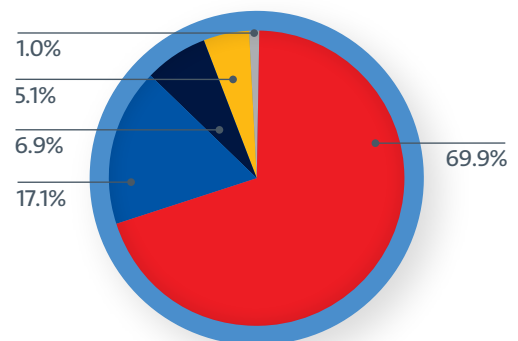
### Total U.S. Workforce by Age Group

■ Under 30 ■ 30-49 ■ 50 and over



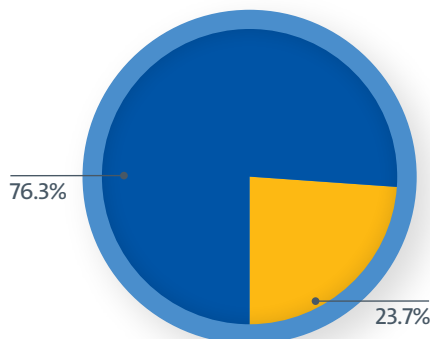
### Total U.S. Workforce by Ethnicity

■ White ■ Black ■ Asian ■ Latino  
■ NtHw/PcIsI/American Indian/Two or More Races



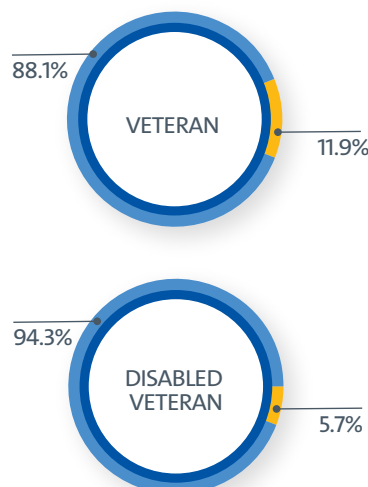
### U.S. Workforce Self-Identified as Having Disability

■ Men ■ Women



### U.S. Workforce by Self-Identified Veteran Status

■ Men ■ Women



### 2017 New Hires

**18,622<sup>1</sup>**  
TOTAL

**6,176<sup>1</sup>**  
WOMEN

**136<sup>2</sup>**  
DISABLED

**448<sup>3</sup>**  
VETERANS

<sup>1</sup>Global <sup>2</sup>Brazil & U.S. <sup>3</sup>U.S. Only

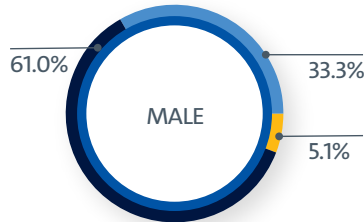
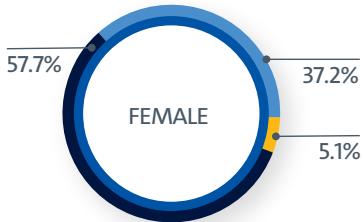


## TALENT: MEASURE

Charts may not add to 100% due to rounding.

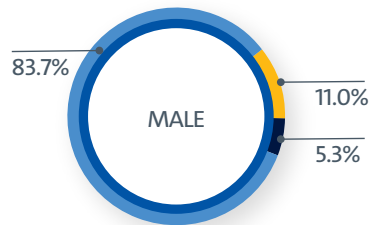
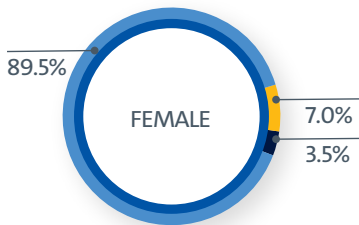
### Global Hires by Age

■ Under 30 ■ 30-49 ■ 50 and over



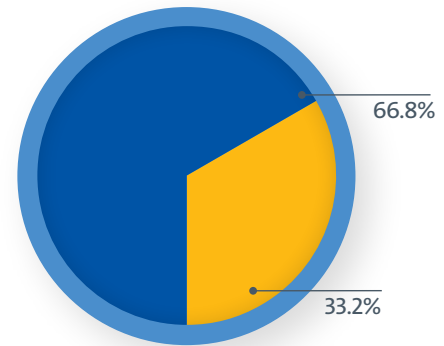
### Global Hires by Region

■ North America ■ South America ■ International



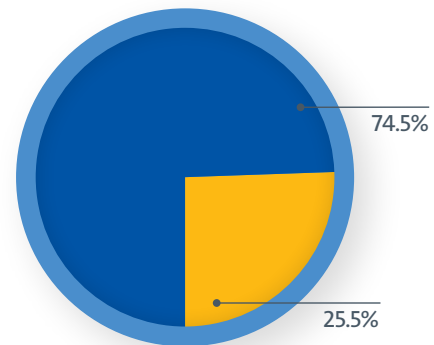
### Global Hires by Gender

■ Men ■ Women



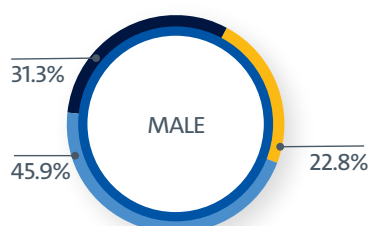
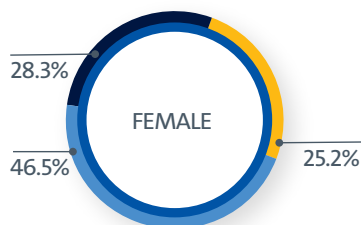
### Global Attrition by Gender

■ Men ■ Women



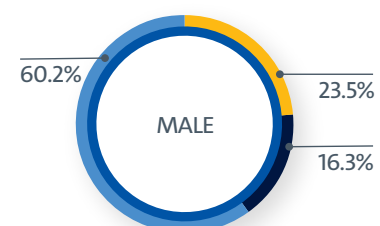
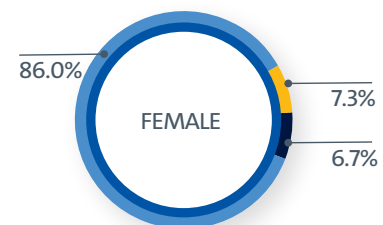
### Global Attrition by Age

■ Under 30 ■ 30-49 ■ 50 and over



### Global Attrition by Region

■ North America ■ South America ■ International





# ACTIONS WE ARE TAKING

## Promote Employee Wellness and Balance

GM recognizes the benefits of a healthy workforce, including its role in attracting, retaining and engaging with talent. As part of our global well-being strategy, we have established health and well-being programs at the regional and local levels around the world. These programs and benefits include:

### *UAW-GM LifeSteps™*

The LifeSteps employee wellness program helps employees take an active role in their health. It provides U.S. salaried employees and their eligible family members with a broad range of tools for health education, risk identification, personal coaching, goal setting and tracking. Users can access this information using a dedicated program website and receive monthly communications on health topics such as nutrition, fitness and stress management.

When employees achieve agreed-upon objectives for a healthy lifestyle, such as providing certification of an annual preventive physical exam, they can receive cash incentives and/or Health Savings Account contributions. In 2017, 84 percent of eligible employees received this LifeSteps incentive.

### *Fitness Facilities*

GM has numerous facilities with on-site fitness centers, group exercise classes and/or walking paths. Membership to on-site fitness facilities is managed at the local level, and most are offered free of charge or deeply subsidized. Using the GM Savings Marketplace, all GM contractors, employees and retirees can access discounts on fitness apparel, equipment and health clubs.

### *Flexible Working Arrangements*

GM places more emphasis on accomplishing work-related tasks than on spending a certain number of hours in the office. This improves employees' work-life balance and enables them to address personal needs while still completing their work.

In job assignments that are compatible, and with leadership approval, we allow flextime scheduling to accommodate individuals who prefer to start their workday early, as well as those who have reasons for working late. GM also allows telecommuting arrangements through which employees complete work away from a GM worksite and connect with their coworkers through email, telephone and web meetings. This can be an effective work arrangement for individuals who face a long commute between their home and worksite, or those who have personal responsibilities that require their presence at home for specific periods of time.

### *Paid Parental Leave*

Through GM Paid Parental Leave (GMPLL), GM also provides two weeks of parental leave, paid at 100 percent, to assist mothers, fathers and adoptive parents in the child bonding process. The policy applies to all U.S. salaried employees immediately upon hire and must be taken within 12 months of birth, adoption or surrogacy. For birth mothers, the leave is intended to be taken following the time provided for birth and delivery. Birth mothers are also eligible to apply for up to two years of Dependent Care Leave, which, while unpaid, provides a job guarantee for up to a year.

### *Health Concerns Hotline*

GM recognizes there is more to health and wellness than exercise and nutrition. We also provide resources for issues like substance abuse, spousal abuse, stress and depression. A toll-free phone number and website are monitored by trained professionals 24/7 and are available in Chinese, English, French, Italian, Korean, Portuguese and Spanish.





*Chinese Resource Group Buick Drive for Your Students.*

## Enlist ERGs to Create Business Value

**38%**  
of GM employees  
are involved in one  
of our 10 ERGs

GM supports 10 employee resource groups (ERGs) for minority communities, veterans, women and new hires. These groups not only serve to bring employees together; they drive business results that help GM brands grow and reach new customers.

The GM Chinese Employee Resource Group (CERG), for example, helped create an opportunity for Buick in response to an unusual trend: while Buick is one of the most popular automobile brands in China, Chinese immigrants do not tend to bring that brand affinity with them when they move to the United States. CERG helped Buick connect with a local Chinese-American community through a pilot ride and drive, called “Buick Drive for Your Students,” at the American Chinese School of Greater Detroit. Because Chinese schools often serve as community centers, CERG knew it could build awareness among a large number of Chinese-American parents there and start a relationship between the individuals and a local dealer.

Suburban Buick of Troy provided Buick vehicles and employees to support the event. Together, the dealer employees and CERG members acted as Buick ambassadors and spoke with more than 1,000 members of the community. They also assisted with more than 200 Buick ride and drives. In addition to introducing the community to its vehicles, Buick also pledged a donation to the school for each ride and drive that took place.

ERG members also provide important outreach to the next generation of automotive engineers. GM Lockport Plant Manager William Tiger has always been passionate about engaging students and

showing them what type of jobs are available to those who study STEM. Through the years, Tiger has also reached out to the Native American community in several states to showcase the vocational opportunities within GM. In recognition of these efforts, the American Indian Science & Engineering Society recently awarded him its Professional of the Year Award.

“When I received word about the award, I was stunned and humbled,” said Tiger, “Then I felt proud as I realized this would be a great opportunity to showcase General Motors’ commitment to the Native American community and the teamwork in GM’s Native American Cultural Network. But most of all, it would be an opportunity to maybe help inspire other Natives to work hard and look for ways to give back to our community.”

We continue to host GM Women, also known as the Affinity Group for Women (AGW), as one of our employee resource groups with chapters around the world. GM policies and practices are also closely aligned with the Women’s Empowerment Principles.



*William Tiger*



## Empower Women to Lead

A recent McKinsey study revealed what too many people have learned firsthand: women face a number of disadvantages in the workplace, including lower hiring and promotion rates, decreased likelihood of receiving advice on how to advance their careers and greater difficulty in securing raises and promotions.

GM champions women's success in the workplace and has recently launched Women in Action (WIA), a new global web-based learning program. WIA targets all GM women but is open to both men and women who are looking to enhance their leadership skills. The initiative was developed to address the loss of female representation higher in the leader pipeline. The online course provides quick, convenient access to content that builds leadership competencies at any career stage and addresses some of the unique challenges faced by women in business.

The program began in 2017 with 12 modules covering everything from developing communication skills to taking career risks. The self-paced learning is delivered through readings, videos, self-assessments and on-the-job application activities. In its first year, 6,700 employees registered—roughly a third of the global female population invited to participate. Of those, 600 were men who anecdotally acknowledged that a better understanding of issues impacting women's leadership development makes them better leaders themselves. We also found that more than 70 groups of 10 to 30 employees informally formed to discuss the modules in mini-workshops or as part of department or work group meetings, furthering impact and engagement of employees.

In early 2018, we expanded WIA to 36 content modules organized into three distinct learning tracks. The tracks include Emerging Leaders, designed to help individual contributors or “next-up” leaders enhance their skills; People Leaders, for those who manage or aspire to manage others; and Executive Leaders, offering a perspective for employees working at higher levels of leadership within GM. As with the original modules, all three tracks are open to any participant, allowing for preparatory growth and self-development for all women and men. The 2018 program officially kicked off on International Women's Day.

### Our Commitment to a Respectful Workplace

We all have the responsibility to uphold General Motors' beliefs and values, which include ensuring a respectful and inclusive workplace that enables everyone to reach their full potential. Given the continued public discussions on sexual harassment, GM's Senior Leadership Team sent an internal message to all employees highlighting the importance of the company's Workplace Environment Policy. Sexual harassment is not tolerated at GM, and we expect employees to report issues, be transparent and treat each other fairly, professionally and respectfully. Our Non-Retaliation Policy encourages employees to report incidents of harassment and promises no retaliation against individuals who speak up. In early 2018, GM made an online antiharassment training course a requirement for every salaried employee around the globe. GM also has engaged in the in-person training of thousands of employees in antiharassment/antidiscrimination, with a plan to reach thousands more.

## Encourage STEM Reentry

GM, partnering with the Society of Women Engineers and iRelaunch, is a founding member of the STEM Reentry Task Force, which aims to create a structural change in the STEM sector by introducing the re-entry internship program as a vehicle for engaging with returning technical employees. “General Motors has the fastest-scaling program of any of our member companies,” said Carol Fishman Cohen, iRelaunch CEO and co-founder. “GM is fully embracing the Take 2 concept and is reaping the benefits of tapping into this population of experienced professionals who have stepped away from their careers for various reasons.”



*GM launches career re-entry internship program.*



## Share Wisdom From Powerful Women

There was an overwhelming feeling of empowerment and inspiration when GM Chairman & CEO Mary Barra and Facebook COO Sheryl Sandberg addressed 200 women at GM's Detroit-Hamtramck Assembly Plant. During the Town Hall discussion, Barra and Sandberg spoke candidly about the future of technology, overcoming gender stereotypes and what it means to be resilient. From new hires to senior leaders, the Town Hall was an opportunity for women in all areas of GM's business to gain perspective and wisdom. The event showcased the power of female leadership and women's ability to shift stereotypes and build up one another in the workplace.



*Facebook COO Sheryl Sandberg and General Motors Chairman and CEO Mary Barra Thursday, June 8 2017, at the GM Detroit-Hamtramck Assembly Plant, where they put on a Facebook Live session and toured the plant before conducting a Town Hall session with women of General Motors, in Detroit, Michigan.*

## Help Professionals Relaunch Their Careers



*Anne Corpel, a Take 2 Program participant (right) with her husband and three children.*

GM's Take 2 program, which provides training and development opportunities for experienced professionals returning to the workforce after taking a career break of two or more years, has expanded greatly since its 2016 launch.

Positions for 2017 sessions were available in Southeast Michigan, Phoenix, Austin and Atlanta, and for the first time, Canada. Also new in 2017, GM sought marketing professionals for the program, in addition to engineering, IT, manufacturing, finance and customer care experts.

The 12-week paid program serves as an "audition" that prepares experienced interns for a full-time career in one of several fields at GM through training, professional development and networking opportunities. In all, 6,200 applicants applied for positions during 2017. Of these applicants, 51 were selected to "re-launch" their careers through Take 2. Ultimately, 44 professionals were hired, including two males, though the program primarily targets women, veterans and minorities looking for a return to full-time careers. The career "gap" for those participating ranges from as little as two years to as many as 25 years.

The GM Talent Acquisition team has created a new, formal designation of employee type for people who join GM through this program. "Relaunchers" receive a customized employee onboarding experience, including a specialized online portal and orientation, a cross-functional cohort immersion day and mentors who support them throughout their internships. "Our goal is to offer full-time positions upon completion of the program," says Adela Vinot, Take 2 program manager. "In order to do that, it's our job to provide them with the tools and support to help them be successful."





*Workplace recognition is a natural addition to our everyday work environments.*

## Workplace Awards & Recognition

### TOP 25 BEST COMPANIES FOR MULTICULTURAL WOMEN 2017

Working Mother Magazine

### BEST FOR VETS

Military Times

### MILITARY & SPOUSAL FRIENDLY

G.I. Jobs

### GOLD VETERAN FRIENDLY EMPLOYER

State of Michigan

### 2017 ERG & COUNCIL HONORS AWARD

Association of ERGs and Councils

## Recognize Others for a Job Well Done

GM's most recent Workplace of Choice survey revealed that recognition is very important to our employees and an area where we as a company could do a better job. A new program, GM Recognition, was created based on that feedback and is designed to help employees make recognition a natural part of how we work every day.

GM Recognition has two online components. The first feature, called "Recognize," can be used by all employees and recognizes the "journey." It is a way to say thank you for a great effort and to recognize behaviors aligned with GM values. The second feature, called "Recognize with Rewards," is available to leaders and rewards the "destination" or results. Leaders can share points in recognition of business results achieved based on behaviors aligned with our values. Employees who receive rewards can redeem these points for merchandise, experiences and charitable donations. This feature is being rolled out in phases across our regions, and will be available everywhere by the end of 2018.

## Support Employees at Every Career Stage

Engineering Group Manager Traci Fiorini was drawn to a career at GM after spending three exciting summers as an intern at the dyno lab in Powertrain, now known as Global Propulsion Systems (GPS). She learned the fundamentals of engineering through hands-on experience, and the constant challenge made her decision easy when she was offered a full-time job at GM.

Fast-forward over a decade, and Fiorini leads her team in providing the laboratory and testing support for the development and validation of GPS products that are many years out, including those that go into the Chevrolet Bolt EV, Diesel Cruze and Camaro ZL1. Her team also develops global lab software that allows them to share work with the other GPS engineering centers around the world. While the technologies she is building and the culture of GM have changed greatly in her time with the company, Fiorini also appreciates what hasn't changed: the chance to work on a new challenge every day she comes to work.





## How GM Shares Their Values



**A CONVERSATION WITH ONE OF OUR NEWEST.** In today's competitive technology environment, why does a candidate say "yes" to GM? Here are some insights from one of our recent hires, Isaac Finger, who graduated from the University of California, Berkeley.



**Q** What sort of work are you involved in?

**A** Currently, I'm working in Vehicle Engineering as a computer-aided engineer in the area of exterior and trim, analyzing such things as stress and impact.

**Q** What attracted you to the automotive sector?

**A** My Dad was a mechanic, so I grew up around grease and rags. I've always been interested in product design and have enjoyed working on optimization problems. Being an engineer at GM gives me the opportunity to tackle unique opportunities in design, cost, manufacturing, sustainability, etc. every day.

**Q** What attributes were most important to you when considering a company to join?

**A** Certainly, benefits—pay, location, vacation, etc.—were important, I was more interested in joining a company with a strong design direction. When I was interviewing, GM was rolling out an extremely well-balanced portfolio of cars that I was excited about. The Buick Avista concept car has an amazing design theme that captivated my attention and got me excited about the future of Buick; the C7 Corvette is a jaw-dropper, and, of course, I am a huge fan of the Camaro.

**Q** Now that you have some experience with GM, what makes you want to develop a career here?

**A** GM has everything I want from a career perspective—the opportunity to experience multiple segments of the company, a diverse workplace, good benefits and a healthy work-life balance.

**Q** How would you describe GM's culture?

**A** Today, it's relatively conventional, but it's rapidly transitioning to one that pushes the envelope and expects its employees to lead in daring and innovative ways—the type of company that can change the world.

**Q** What programs and tools are you finding helpful to your professional development?

**A** Networking through JumpStart and GM's new recognition platform have been very helpful. GM is supportive if you decide to pursue further education, which is something I see myself taking advantage of soon.

**Q** What has surprised you most about working for GM?

**A** It's easy to talk with leadership, and they are interested in your feedback, be it positive or negative. I'm also impressed with the efforts and investments we are putting into autonomous and electrified vehicles. It makes me very proud to be at GM.



*GM works with colleges and universities to source talented recruits.*

## Attract and Keep Top Talent

The increasingly fierce war for talent showed no signs of quieting in 2017. In fact, GM hiring statistics suggest that the battle doesn't end even when a candidate accepts a position: global attrition is projected to be more than 20,000 salaried employees over the next five years. Nationwide, 66 percent of millennials said in 2016 that they expected to leave their organizations by 2020. As GM continues to build leadership in autonomous and electrification technologies, we are also competing for talent—not just with automakers and manufacturing companies—but also with Silicon Valley.

GM is determined to become a workplace of choice for many of these job seekers. In 2017, we streamlined our careers website and ramped up our social media recruiting efforts. We intensified our focus on hiring from within, launching the Finding Your Next Great GM Job training program to 250 participants.

Colleges and universities remain an important source of talented recruits. To build connections with students, we sponsor and partner with numerous universities across the country. As an example, GM helped fund a new engineering and design lab space at Georgia Institute of Technology, where students focus on connected cars and technology innovation. At Howard University, we sponsored the HUHACKS Hackathon, where teams of students were given 24 hours to implement a creative business idea. We also organized the sixth annual GM and Wayne State University Supply Chain Case competition, during which students from 20 U.S. and international institutions competed to address global purchasing and logistics issues related to the Chevrolet Bolt EV.



**70%**  
ACCEPTANCE RATE  
FOR CAMPUS OFFERS



**19**  
UNIVERSITY  
PARTNERSHIPS



**277,329**  
APPLICATIONS  
RECEIVED

**56%**  
POSITIONS FILLED  
COME FROM  
WITHIN GM

**6,673**  
GLOBAL SALARIED  
CANDIDATES HIRED







# GOVERNANCE & ETHICS

ASPIRATION: FULL  
TRANSPARENCY & INTEGRITY—ALWAYS

WHAT WE ASPIRE TO: FULL TRANSPARENCY & INTEGRITY—ALWAYS .....	114
OUR MANAGEMENT APPROACH TO GOVERNANCE & ETHICS .....	115
WHAT WE MEASURE .....	120
ACTIONS WE ARE TAKING	
Promote an Ethical Culture .....	121
Be a Model for Board Gender Diversity .....	121
Required Corporate Training .....	122
Help Employees Speak Up .....	123



## GOVERNANCE & ETHICS: ASPIRE

### WHAT WE ASPIRE TO:

#### FULL TRANSPARENCY & INTEGRITY—ALWAYS

Our mission is to become the world's most valued automotive company. We want to do business the right way and win with integrity. That requires trust and transparency. Taking personal responsibility for our actions is critical to the success of our company. That responsibility begins at the highest level with our Board of Directors. This highly engaged body, with a diverse range of expertise, drives effective oversight of our strategic priorities, operations and actions as an organization. The Board encourages healthy, constructive debate and regularly challenges the company to do what is right and make the tough decisions essential to move us forward in times of significant change and transformation.

# OUR MANAGEMENT APPROACH TO

## GOVERNANCE & ETHICS



The Board of Directors' mission is to represent the owners' interest in the long-term health and the overall success of the business and its financial strength. GM is governed by a Board of Directors and committees of the Board that meet throughout the year. The Board is elected by shareholders to oversee and provide guidance on GM's business and affairs and is the ultimate decision-making body of the company, except for those matters specifically reserved to shareholders. It is highly engaged in developing GM's strategic plan and overseeing execution of that plan. The Board is committed to sound corporate governance structures and policies that enable GM to operate its business responsibly and with integrity, and to position GM to compete more effectively, sustain its success and build long-term shareholder value.

### *Board Structure*

The Board is comprised of 11 members, all but one of whom—Chairman & CEO Mary Barra—are independent, as defined by the Board's Corporate Governance Guidelines, which reflect the independence standards of the New York Stock Exchange and the U.S. Securities and Exchange Commission.

The Board has the flexibility to decide its optimal leadership structure, specifically when the positions of Chairman and CEO should be combined or separated and whether an executive or independent director should be Chairman. This allows the Board to choose the most appropriate leadership structure for the company to best serve the interests of our shareholders at any particular time. Currently, the Board is led by our Chairman & CEO, Mary Barra, whose role as Board Chairman is complemented by that of our Independent Lead Director, Tim Solso. The Board believes that Ms. Barra's in-depth knowledge of GM's business and understanding of day-to-day operations brings focused leadership to our Board and reinforces accountability for the company's performance. Our Corporate Governance Guidelines, available on our website, [gm.com/investors/corporate-governance.html](http://gm.com/investors/corporate-governance.html), specify the duties of the Lead Director and independent directors.

The Board has the following standing Committees: Audit; Cybersecurity; Executive; Executive Compensation; Finance; Governance and Corporate Responsibility; and Risk.

## KEY TAKEAWAYS

### **Governance**

- > Our Board of Directors is committed to integrating GM's Environment, Social and Governance (ESG) principles throughout the enterprise.
- > Beginning in 2017, GM's Short-Term Incentive Plan links compensation for certain positions to sustainability measures.
- > The Board established a new Cybersecurity Committee in response to GM's growth in the space of future mobility strategies.

### **Ethics**

- > Our vision, core values and seven core behaviors serve as GM's roadmap for sustainability.
- > GM's Code of Conduct, Winning with Integrity, sets our expectations for ethical behavior, applies to every level of the company and includes expectations for suppliers and contracted parties who work on behalf of GM.
- > Annual Code of Conduct certification and compliance is required of all salaried employees, 100 percent of whom complied in 2017.





The Board has adopted governance structures and policies that it believes promote Board independence and the interests of shareholders. These structures and policies include, among others:

- > Annual election of all directors
- > Majority-vote and director resignation policy for directors in uncontested elections
- > Annual review of the Board's leadership structure by the independent directors
- > Independent Lead Director empowered with robust and clearly delineated duties
- > A supermajority of independent directors
- > Regular executive sessions at Board meetings without management present
- > Key Board committees composed exclusively of independent directors
- > Directors' unrestricted access to management and independent advisors
- > Active shareholder engagement process, including Director-Shareholder Engagement Policy
- > Proxy access for shareholders
- > Shareholder right to call special meetings
- > One-share, one-vote standard
- > No poison pills

The Board has a shareholder engagement strategy. During 2017, members of the Board, including our Independent Lead Director, met in person with shareholders representing approximately 25 percent of our outstanding shares. Additionally, members of management met in person or telephonically with more than 75 shareholders (representing more than 45 percent of outstanding shares) on various matters. The constructive insights, experiences and ideas exchanged during these engagements allow the Board and management to further evaluate and assess key initiatives from different perspectives and viewpoints. GM is a signatory to the Commonsense Principles of Corporate Governance, which can be found at [www.governanceprinciples.org](http://www.governanceprinciples.org).

### *Governance and Corporate Responsibility*

The Board is committed to overseeing the company's integration of environmental, social and governance (ESG) principles throughout the enterprise. This oversight includes an annual sustainability review by the Board and regular review of ESG issues by the Board's Governance and Corporate Responsibility Committee at each scheduled meeting. GM is fortunate that several of its Board members have extensive business experience in managing ESG- and climate-related issues, such as transitioning from high- to low-carbon-emitting technologies or managing environmental impacts within the supply chain. The Board is committed to elevating GM's leadership profile and reputation among investors, policymakers and others on ESG issues and practices and believes GM has a unique opportunity to address these important issues.

In 2017, the Board modified GM's Short-Term Incentive Plan to incorporate an individual performance component, which, for certain positions, includes sustainability measures. Please see GM's 2018 Proxy Statement for further discussion of individual



*GM's Board and senior leadership team are committed to overseeing the company's integration of ESG principles throughout the enterprise.*



performance results that had a positive impact to ESG measures. Linking total compensation to the achievement of these individual measures will increase focus on efficiency and performance across the business for our sustainability initiatives.

### *Risk Management*

The Board has the overall responsibility for risk oversight, with a focus on the most significant risks facing the company. While GM does not follow the precautionary approach, it does have a comprehensive risk management place in plan. Effective risk management is the responsibility of the CEO and other members of management, including the Senior Leadership Team. Our Board implements its risk oversight function both as a whole and through delegation to Board Committees, particularly the Risk Committee. Each of the Board Committees is responsible for oversight of risk management practices for categories of risks relevant to its functions. Our Board recognizes that cybersecurity is critical to GM's operations—particularly as management continues to execute on its future mobility strategies, such as self-driving vehicles and connected-vehicle technology. In 2017, our Board established a new Cybersecurity Committee to enhance its oversight of these cyber risks. The Board believes that its structure for risk oversight provides for open communication between management and the Board and its Committee.

All standing committees other than the Executive Committee are composed entirely of independent directors. Each committee has a written charter setting forth its purpose, authority and duties. The committees enhance the Board's oversight of areas that are critical to GM's corporate responsibility and sustainability efforts, including: transparent and reliable financial reporting, risk identification and mitigation, ethics, vehicle and workplace safety, pay-for-performance, diversity, Board and management succession planning, shareholder proposals and nominations, corporate responsibility and political spending issues.

### *Ethics*

The foundation of GM's business is our vision—seeing a world with zero crashes, zero emissions and zero congestion; our core values—customers, excellence and relationships; and our seven core behaviors—Think Customer, Innovate Now, Look Ahead, One Team, Be Bold, It's on Me, and Win With Integrity. They drive our business decisions and activities worldwide and are our road map for sustainability.

An ethical business starts at the top. Chairman & CEO Mary Barra and other members of our senior leadership team regularly issue messages to all employees emphasizing the importance of our Code of Conduct and their desire that every employee strive to do the right thing. Our Board of Directors is also committed to upholding the highest legal and

# GENERAL MOTORS



## GM'S CODE OF CONDUCT

WINNING WITH INTEGRITY



*We encourage our employees to win with integrity and to act in a way that makes GM a company for which we are proud to work.*

ethical conduct in fulfilling its responsibilities. All Board members, officers and employees are expected to act ethically at all times and to adhere to the law, our Code of Conduct and our policies. Our Board also completes GM's Code of Conduct training.

### ***Employee Conduct***

From the top down, every GM employee is important to maintaining our ethical standards. We encourage our employees to win with integrity, and to act in a way that makes GM a company for which we are proud to work. GM's Code of Conduct reinforces our commitment to a work environment founded on mutual respect, trust and accountability, and outlines the policies and obligations that guide our business conduct.

GM's Code applies to everyone in our company, at every level, including employees, supervisors, Board members and subsidiaries GM controls. We expect our third parties, including suppliers, to act in a way that is consistent with the principles and values outlined in our GM Supplier Code of Conduct when conducting business with, and on behalf of, GM. We expect employees working with our third parties to hold them accountable.

### ***Compliance***

On an annual basis, all salaried employees are required to review the Code of Conduct and certify that they agree to comply with the policies contained in the Code, and that they have reported any violations of the Code or vehicle or workplace safety issues. In 2017, GM achieved a 100 percent completion rate among salaried employees for its Code of Conduct Certification Program.

Additionally, all salaried employees, regardless of role or location, are required to disclose actual and potential conflicts of interest as part of the certification process. Board members who are not employees provide written disclosure of any actual or potential conflicts of interest at least once a year.

To ensure compliance awareness continues throughout the year, our global ethics and compliance communications team develops and communicates compliance messages on a regular basis, underscoring the importance of various compliance topics.

Our Code of Conduct governs how our employees are expected to act: displaying integrity in the workplace, in the marketplace and in their communities when representing GM. It directs all employees to be good stewards of the environment as embodied in our Environmental Principles, which guide the conduct of our daily business practices worldwide.

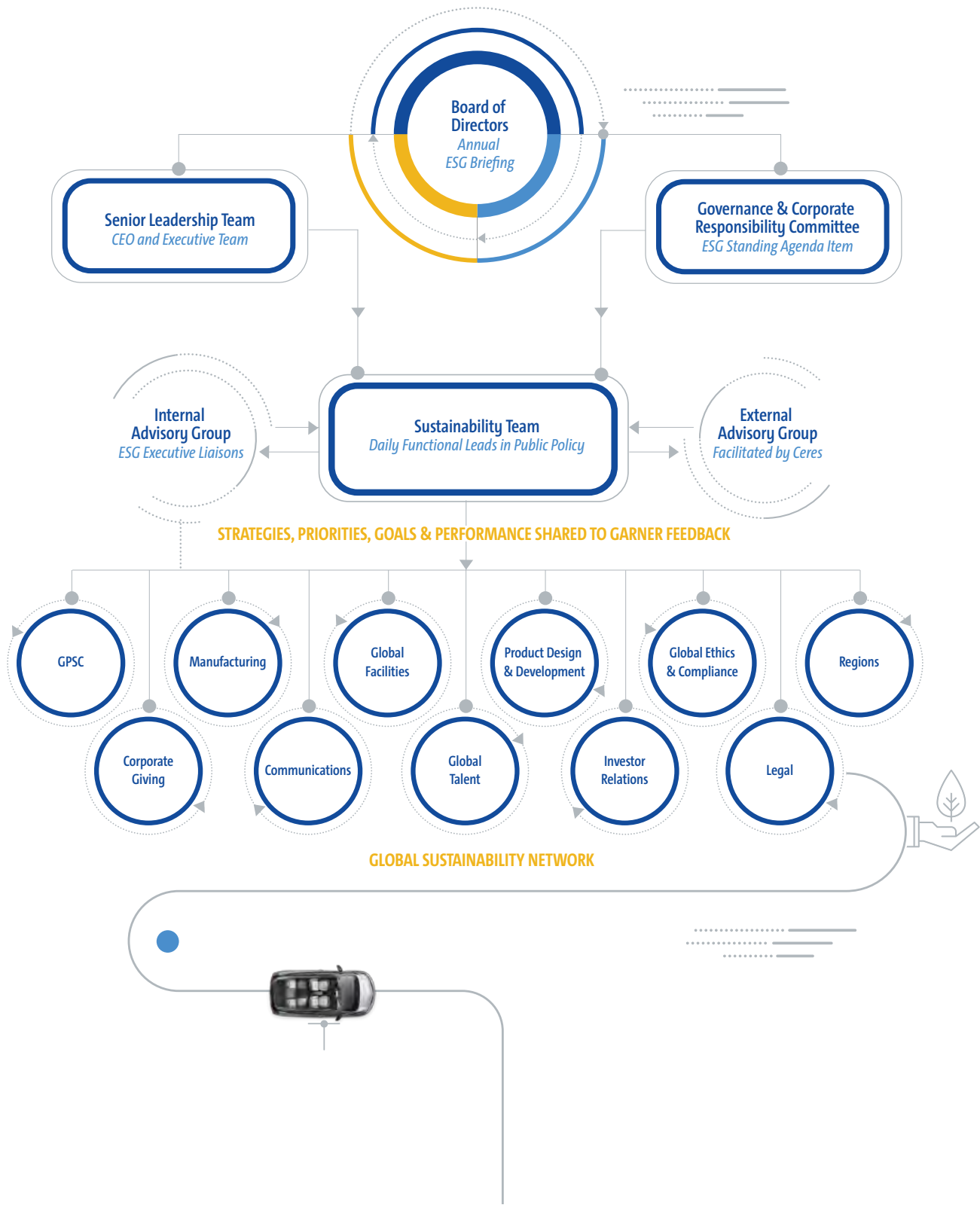
The Code of Conduct also outlines what is considered misconduct, including what constitutes misuse of company property, discrimination, harassment, conflicts of interest, unethical behavior or misuse of information or computer systems. It provides guidance about what may constitute unfair competition or insider trading and guidance on export compliance, privacy, anticorruption and interactions with government officials.

To ensure the effectiveness of our Code of Conduct, we periodically use independent firms to evaluate our compliance program. We also have regional compliance officers and compliance personnel in each GM business unit region to provide guidance and to answer ethics and compliance questions. In addition, our Code clearly publicizes in multiple places a list of contact points, which include human resources, security and audit staff, to answer employee questions. We maintain a robust hotline for reporting misconduct and safety issues and have a strict nonretaliation policy.





## GENERAL MOTORS ESG Governance



# WHAT WE MEASURE

## GOVERNANCE & ETHICS

**97,792**

EMPLOYEES AND CONTRACT WORKERS COMPLETED **391,167** REQUIRED COURSES



**13,940**

CORPORATE REQUIRED TRAINING COURSES TAKEN BY NEW EMPLOYEES



**448,237**

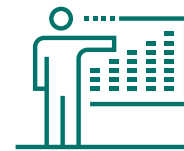
TOTAL ONLINE COURSES DELIVERED

**100%**

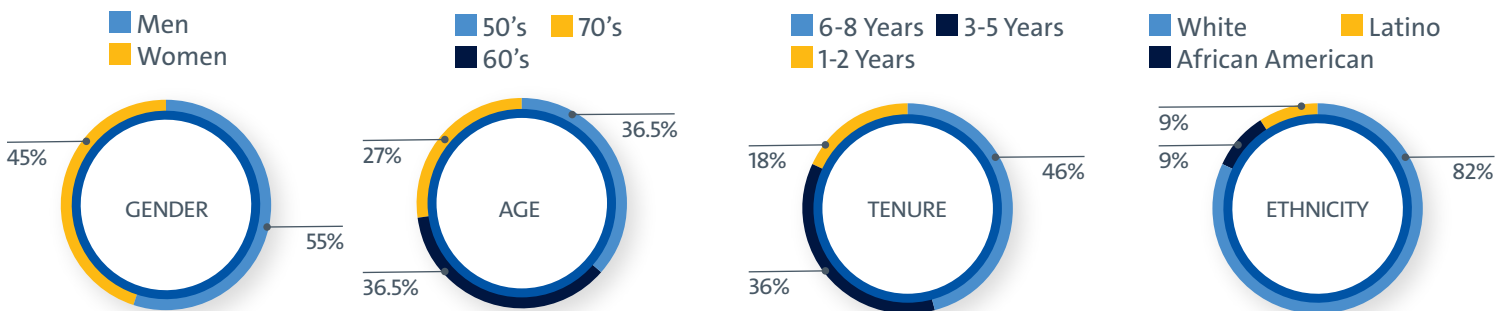
OF SALARIED EMPLOYEES COMPLETED CODE OF CONDUCT CERTIFICATION

**13,277**

EMPLOYEES RECEIVED IN-PERSON COMPLIANCE TRAINING DIRECTLY FROM THE COMPLIANCE GROUP



### Board Composition



**64 years**

Average Age

**5 years**

Average Tenure

**10**

2017 Board Meetings

**29**

2017 Committee Meetings

**97%**

2017 Board Attendance

Average director attendance at Board and Committee meetings was 97 percent. Each director standing for re-election attended at least 90 percent of the total meetings of the Board and Committees on which he or she served in 2017.



## ACTIONS WE ARE TAKING

### Promote an Ethical Culture

GM conducted its first ethical culture survey in 2013, right before the ignition switch recall and a subsequent effort to significantly change company culture. Going into 2017, we wanted to measure the effectiveness of that change and commissioned the Gartner Group to repeat the survey, using the 2013 survey as the benchmark.

More than 12,000 employees participated, and we were pleased to discover that scores significantly improved across all seven components of a culture of integrity, as well as a 3 percent increase in our overall Integrity Index score. Scores also exceeded every industry average, based on benchmark data from 21 other companies. Key findings include improved perceptions regarding openness of communication and clarity of expectations. In addition, employees stated that they observed fewer incidents of misconduct and, in those instances, were more comfortable speaking up when they did see something wrong. Prior to the

survey, GM introduced a major revision of our Code of Conduct, “Winning with Integrity,” with the aim of clarifying any questions employees may have about our expectations and continuing to strengthen a culture of integrity.

GM joined companies around the world in the fight against corruption as it recognized the United Nation’s International Anti-Corruption Day in December 2017. As a signatory to the United Nations Global Compact, GM is committed to taking a stand against corruption through the integration of strong anticorruption principles and practices in our business operations and strategies.

---

### Be a Model for Board Gender Diversity

Companies increasingly understand the benefit that gender diversity in the board room can have on shareholder value. During 2017, GM CEO and Chairman Mary Barra accepted the Muriel F. Siebert Award, which recognized GM for being the first major industrial corporate that achieved Board gender parity. The award, named for a founder of the Women’s Forum and the first woman to hold a seat on the New York Stock Exchange, is given by the Women’s Forum of New York and recognizes

CEOs that have made a distinguished difference in advancing women’s leadership at the Board level.

Upon accepting the award, Barra remarked, “Having more perspectives and opinions leads to more thoughtful decision-making and innovative ideas. This sentiment, however, goes beyond women on corporate boards. We must also focus on the next generation of women in the workplace and, by extension, the next generation of women leaders.”





## Required Corporate Training

Training is a critical aspect of fostering an ethical culture. In 2017, GM had four courses that all GM salaried employees were required to complete in addition to certification to our employee Code of Conduct "Winning With Integrity" that is required each year.

**GENERAL MOTORS**

**2017 Corporate Required Training**

 <b>GLOBAL PRODUCT SAFETY BASICS</b> #53858 <p>The goal of this course is to increase awareness of GM's safety strategy, understand steps GM has taken to improve awareness of our product safety process and clearly communicate our shared responsibility to speak up when we have a safety concern.</p>	 <b>GLOBAL ANTI-CORRUPTION</b> #47051 <p>This course provides simple, straight-forward guidance so that employees can meet GM's commitment to integrity and transparency, spot signs of corruption, choose trustworthy partners and confirm that GM's money is spent for legitimate goods, services and promotional activities.</p>	 <b>GENERAL PRIVACY OVERVIEW</b> #53148 <p>The objective of the General Privacy Overview course is to promote awareness of the sensitivity in the processing consumer and employee personal information collected by GM. This course outlines GM's policies on the collection and use of personal information, meeting compliance requirements of global and local privacy laws and treating personal information with extra care by doing what is necessary to ensure it is protected.</p>	 <b>CYBERSECURITY NEWS</b> #53429 <p>This course describes how to protect GM products and GM assigned IT devices by promoting awareness of the most serious cyber security threats facing GM employees. It explains the updated GM data classifications and how to reduce the risk of unauthorized disclosure of GM Information, including GM intellectual property and personal data.</p>
<b>SPEAK UP</b> FOR SAFETY	<b>GUARD</b> AGAINST CORRUPTION	<b>MANAGE</b> PERSONAL INFORMATION	<b>PROTECT</b> GM INFORMATION
<b>YOUR BENEFIT:</b> Gain skills and knowledge to keep you protected in business.	<b>GM's BENEFIT:</b> GM does business with consistency, integrity and a shared value system.	<b>GLOBAL BENEFIT:</b> A good global reputation helps make us the most valued car company in the world!	

**PROTECT GM'S REPUTATION THROUGH EDUCATION**



**GOAL:**  
Become the most valued car company in the world by putting the customer first, acting with integrity in all relationships and protecting our company every day.

Modifications were made to training requirements and required courses in 2018 designed to address emerging issues of importance to our industry, including:

- > Product and workplace safety
- > Information security
- > Export and sanctions compliance
- > Workplace harassment



*Employees are encouraged to report any potential concerns of misconduct.*

## Help Employees Speak Up



**2,470**  
REPORTS TO  
AWARELINE  
GLOBALLY

Employees are encouraged to report any potential concerns of misconduct first to their supervisor, the GECC, HR contact, Legal staff contact or local leadership. In cases where an individual is uncomfortable reporting through established internal channels, reports can be made using our toll-free GM Awareline hotline. The Awareline is operated by an independent third party and allows employees and others to report concerns of misconduct by the company, its management, supervisors, employees or agents. Reports can be made in over a dozen languages 24 hours per day, 7 days per week, by phone, web, email, postal service or fax. Reports may be made anonymously, where permitted by law.

Reports made to the Awareline are classified into one of two categories. Category 1 reports generally include incidents of fraud, harassment, theft or discrimination. Category 2 reports are generally comprised of employee/workplace issues, including customer-service complaints, employee-benefits issues and Human Resource-related grievances. Category 1 reports are formally investigated to conclusion. The investigation results are provided to pertinent stakeholders for remediation and corrective action. Category 2 reports are provided to local management for handling. In 2017, GM received approximately 2,470 reports to the Awareline, and approximately 17 percent were classified Category 1.

For potential vehicle safety issues, a special Speak Up For Safety hotline has been established. GM employees and contract workers may also communicate with our independent Monitor anonymously, as permitted by law, or otherwise at any time. The Monitor maintains an independent toll-free phone number for reporting any violation of law or unethical conduct, as well as a globally available online web form. The Monitor's role supplements, but does not replace, existing established global employee reporting tools, such as GM Awareline and Speak Up For Safety.

Speak Up!, GM's Non-Retaliation Policy, is intended to protect GM employees from retaliation as a result of raising concerns in good faith. Industry benchmarking data shows that the majority of misconduct reports are made to an employee's manager. To help our own GM managers in such circumstances and to provide additional guidance regarding GM's Non-Retaliation policy, the GECC and Global Security teams developed a tool kit on how to address workplace retaliation.

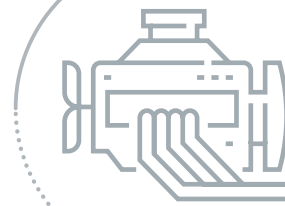


# OPERATIONS

ASPIRATION: POSITIVE ENVIRONMENTAL & SOCIAL IMPACT

WHAT WE ASPIRE TO: POSITIVE ENVIRONMENTAL & SOCIAL IMPACT .....	125
OUR MANAGEMENT APPROACH TO OPERATIONS .....	126
WHAT WE MEASURE .....	130
ACTIONS WE ARE TAKING	
Make Progress Toward Our Renewable Energy Commitment .....	133
Protect and Promote Biodiversity .....	134
Set Benchmarks for Global Vehicle Manufacturing .....	134
Think Circular Across Our Value Chain .....	135
Offset Emissions While Protecting Biodiversity .....	137
Support Carbon Pricing Efforts .....	138
Drive Energy Efficiency Throughout Our Facilities .....	139
Ride the Wave of Water Conservation .....	141





## OPERATIONS: ASPIRE

### WHAT WE ASPIRE TO:

#### POSITIVE ENVIRONMENTAL & SOCIAL IMPACT

There are very few companies that operate at GM's level globally – 180,000 employees working in more than 300 facilities; and affiliations with nearly 12,500 locally owned dealerships worldwide. Locally, this scale means that we impact hundreds of communities around the world. 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 ultimately benefit our customers and contribute to our aspiration of zero emissions.

# OUR MANAGEMENT APPROACH TO

## OPERATIONS



We currently maintain nearly 300 facilities, including more than 150 manufacturing plants around the world. No two facilities are alike. There is a great range among them in terms of size, function, processes and local environment. All GM-owned and -operated facilities have their own operating plans, but function under a common set of Environmental Principles, which provide an effective foundation for environmental stewardship and support our efforts to build the most valued automotive company.

### *Environmental Governance*

GM has a robust process to enhance the integration of environmental sustainability practices into daily business decisions and to (1) comply with applicable environmental laws and regulations; (2) monitor GM's performance according to GM's own Environmental Performance Criteria (EPC), which are universal performance requirements designed to protect human health and the environment in accordance with the GM Environmental Principles and set baseline standards; and (3) conform to other key performance indicators, such as landfill-free sites.

Each GM manufacturing site has one or more environmental engineers, who are supported by a GM regional environmental team. Our Global Manufacturing organization oversees and manages these teams. We also have an annual business planning process, known as Business Plan Deployment (BPD), to strengthen the management of environmental performance (e.g., linking more Global Manufacturing employees to GM's performance against our 2020 operational commitments). Furthermore, throughout our manufacturing organization, annual compensation is based on performance to the BPD, which includes environmental metrics.

### *Environmental Principles*

As a responsible corporate citizen, GM is dedicated to protecting human health, natural resources and the global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions. The following Environmental Principles provide guidance to GM personnel in the conduct of their daily business practices:

- > We are committed to actions to restore and preserve the environment.
- > We are committed to reducing waste and pollutants, conserving resources and recycling materials at every stage of the product life cycle.
- > We will continue to participate actively in educating the public regarding environmental conservation.
- > We will continue to pursue vigorously the development and implementation of technologies for minimizing pollutant emissions.

## KEY TAKEAWAYS

- > GM's Environmental Principles and environmental management system are the foundation for optimizing the environmental footprint of our operations.
- > Since 2010, we have been measuring our progress against a set of 2020 manufacturing commitments, having achieved five to date.
- > We measure and manage resource use across our value chain to drive business efficiencies and conserve natural resources.
- > While our facilities vary widely in function and size, our resource management strategy is applied on a consistent basis.



## OPERATIONS: MANAGE



*A 580 kilowatt solar array was recently added to the roof of our Baltimore Operation's e-Motor building, where electric motors and drive units for the Chevrolet Spark EV are built. This new array is made up of approximately 2,420 panels and covers 87 percent of the e-Motor building's roof.*

- > We will continue to work with governmental entities for the development of technically sound and financially responsible environmental laws and regulations.
- > We will continue to assess the impact of our plants and products on the environment and the communities in which we live and operate, with the goal of continuous improvement.

### ***Environmental Policy***

We believe our past achievements in the area of environmental stewardship are the result of a combination of Environmental Principles and Performance Criteria and local policies. With our Environmental Principles as a foundation, this combination provides a framework for our manufacturing and nonmanufacturing facilities and major technology centers around the world to implement global policy, consistent and complementary local policies and the EPC. This approach helps us to strive for operational compliance across all sites at all times and to embed a philosophy of continuous improvement into each facility's environmental management system. These plant-specific actions play a significant role in our overall environmental compliance, ensuring that local plant policies:

- > Are appropriate to the nature, scale and environmental impacts of its activities, products or services.
- > Reinforce a commitment to comply with applicable laws and regulations and with other relevant environmental requirements.
- > Include a commitment to continuous improvement and pollution prevention.

- > Provide the framework for setting and reviewing environmental objectives and targets.
- > Are documented, implemented, maintained and communicated to all employees.

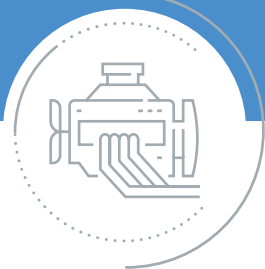
Statutory, regulatory and permit programs administered by various governmental agencies impose numerous environmental requirements on our facilities and products, and compliance with these requirements is an organizational imperative. Compliance issues occasionally arise, and each allegation of noncompliance is treated seriously by GM. In 2017, GM received 33 Notices of Violation (NOVs), 25 in the U.S. and 8 outside the U.S. GM took actions to resolve these NOVs. GM did not pay any penalties or fines equal to or in excess of \$10,000 USD.

### ***Environmental Management System***

All the manufacturing facilities that GM owns and operates, and a number of our nonmanufacturing sites around the world, have implemented an Environmental Management System (EMS). This system combines elements of the environmental management standard International Organization for Standardization (ISO) 14001 and elements that are specific to our operations. [GM's Environmental Management Systems Specifications](#) are designed to drive a continuous performance improvement cycle in line with legal requirements, site-specific objectives and targets, and corporate and regional policies and strategies.

GM has developed a robust internal process to self-declare conformance to ISO 14001. Our U.S. and Mexican operations use this process to self-declare conformance to the ISO EMS standard.





## OPERATIONS: MANAGE

GM operations in other regions currently utilize third-party accredited registrars to certify conformance to ISO. New manufacturing operations must develop and implement EMS within 24 months of the start of production or the date of acquisition. Our operations in the U.S., Canada and Mexico have integrated their EMS within the GM Global Manufacturing System and Business Plan Deployment process, resulting in an EMS with attributes beyond those specified in ISO 14001.

By maintaining a common EMS, we can measure our environmental performance and share knowledge, processes and technologies within GM to plan and measure improvements across all our manufacturing facilities. Our environmental management practices have helped us improve our environmental performance.

### *Environmental Performance*

Implementation of our Environmental Principles is facilitated by EPC that apply to our global manufacturing facilities and major technology centers. We are expanding EPC application to our nonmanufacturing facilities and are working toward implementation of this by the end of 2018. The EPC are internal performance requirements

for the management of environmental issues at our facilities. In many cases, they also supplement applicable legal requirements by setting minimum standards for environmental management and performance practices that may be more stringent than those required by law. As a result, we work to ensure that a base level of environmental performance is achieved, regardless of where a facility is located or whether a particular jurisdiction has an environmental regulatory program in place. For example, the EPC establish a global baseline standard for all new assembly operations with regard to paint shop emissions and associated minimum technology requirements, regardless of whether the country in which the paint shop is operated has adopted specific air emissions requirements. Where laws are more stringent than our EPCs, the law controls.

### *Employee Training*

Our people are key stakeholders in our environmental stewardship and are critical to our environmental performance. We strive to have the best-trained environmental professionals in the world. Although most environmental training is specific to a facility, country or region, we continually provide strategic training and guidance to our environmental professionals to help them keep pace with evolving environmental issues and best practices that could have application worldwide. Our training addresses a variety of issues, including, but not limited to, implementation of corrective and preventive actions, effective use of safety data sheets, management of greenhouse gases and regulatory requirements for air, waste and water.

In the U.S., we have set a goal for all our facilities' environmental professionals to become Certified Hazardous Materials Managers (CHMM®). The certification requires a relevant degree and three years of appropriate experience or 11 years of experience without a degree, and the successful completion of an Institute of Hazardous Materials Management® exam. In order to maintain certification, at least 20 hours of technical environmental training is required annually. In Canada, new environmental professionals receive at least 40 hours of training initially, followed by regular refresher training. In addition, some Canadian environmental professionals receive specialized training as certified toxic substance reduction planners. Outside North America, we have



*Training employees in environmental stewardship, ranging from preventive actions to regulatory requirements, is critical to our performance.*



## OPERATIONS: MANAGE



*Sixty-eight GM sites achieved Wildlife Habitat Council Conservation certification.*

developed a Global Environmental Certification and Training Program focused on GM Environmental Principles, our internal environmental performance criteria and industry best practices.

### **Operational Impact Strategy**

As we work toward our aspiration of having a positive environmental impact across our value chain, we focus a tremendous amount of effort toward improving the efficiency of manufacturing processes used to produce our vehicles. Our efforts pay significant dividends: Sound resource management helps drive manufacturing excellence and significant cost savings while reducing various risks—all of which helps us offer customers better vehicles at more affordable prices. Today, GM is proud to be an industrial leader in energy efficiency, as well as emissions, water and waste reduction.

We measure and manage resource use at all manufacturing locations, engineering centers, parts distribution centers and proving ground sites around the world. These facilities vary in function, size and surrounding natural environments, which gives rise to varying concerns such as water scarcity or air quality. Our strategy across these facilities, however, has common attributes:

- > It's holistic, in that we approach resource conservation from a systems perspective to develop optimal strategies.
- > It's heavily reliant on innovation, using as much creativity and out-of-the-box thinking in our conservation efforts as we do in innovating new vehicle technologies. In fact, we often cross functions, such as manufacturing and vehicle development, as we work to realize new resource efficiencies.

- > It's a collaborative process that reflects a manufacturing culture steeped in the sharing of best practices, particularly behavior. We often collaborate with other businesses and organizations to address tough challenges and engage local communities and schools on environmental stewardship.
- > It's incentivized by linking the annual environmental performance of our facilities and our 2020 operational commitments to the compensation of a cross-section of global manufacturing employees and plant-level management. In addition, employees in the U.S. who offer energy, waste and water conservation ideas that are implemented are eligible to receive a portion of the savings up to US\$20,000.



*A 2.2 megawatt solar array powers 1.5 percent of GM's Lordstown assembly plant in Ohio, the home of the Chevrolet Cruze.*

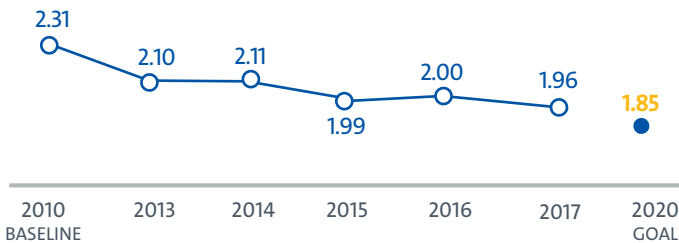
# WHAT WE MEASURE

## OPERATIONS

### Operational Commitments

#### Reduce Energy Intensity by 20 Percent\*

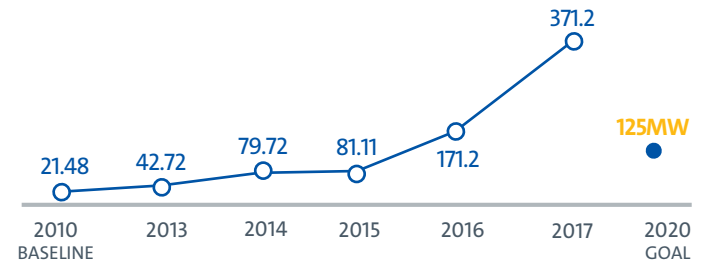
(MWh/vehicle)



Energy conservation programs combined with increased use of renewable energy sources have helped drive a 15 percent reduction in energy intensity against our 2010 baseline.

#### Increase Renewable Energy to 125MW\*

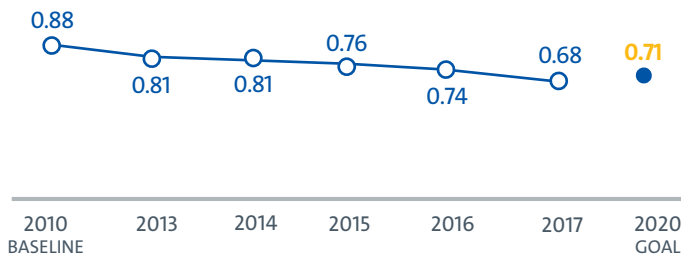
(MW)



Renewable energy generation is increasing at an aggressive pace as we work toward a new goal to meet 100 percent of the electrical needs of our global operations through renewable energy by 2050.

#### Reduce Carbon Intensity by 20 Percent\*

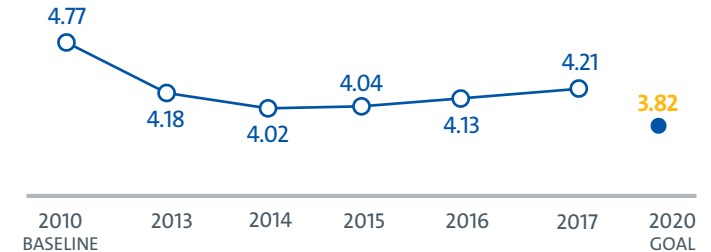
(metric tons CO<sub>2</sub>e/vehicle)



Reductions in carbon intensity, which are close to 22 percent since 2010, have closely tracked with improved energy efficiency. We have met our target three years before our goal year.

#### Reduce Water Intensity by 15 Percent\*

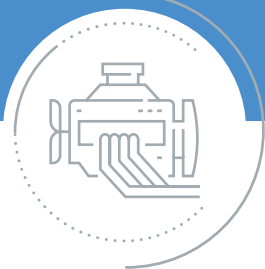
(M3/vehicle)



By the end of 2017, we had reduced our overall water intensity by 12 percent since 2010 and are well within reach of achieving our 2020 goal early.

*\*Upon our divestiture of Opel and Vauxhall, GM used the GHG Protocol Corporate Accounting and Reporting Standard, published by WBCSD and WRI as a basis for our methodology for publicly reporting GHG.*

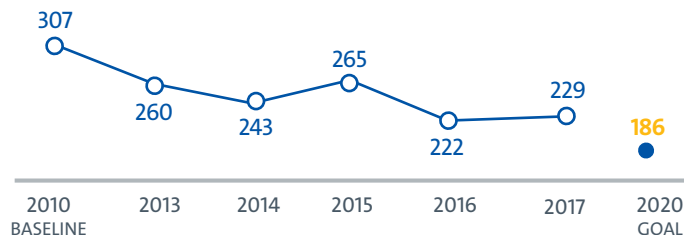




## Operational Commitments

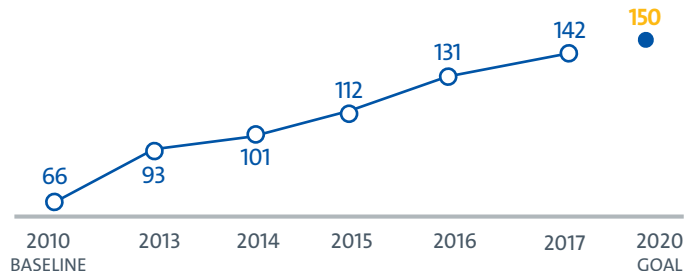
### Reduce Waste Intensity by 40 Percent\*

(kg/vehicle)



By the end of 2017 we had reduced our waste intensity by 25 percent and have a plan to meet it by 2020.

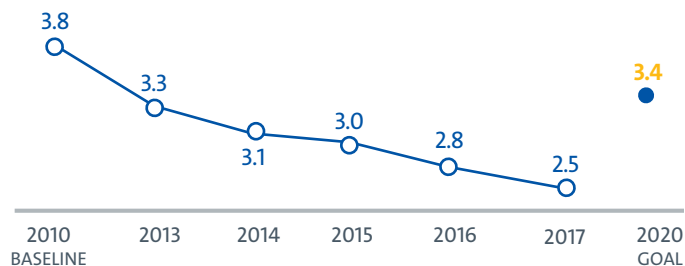
### Reach 150 Landfill-Free Sites\*



The addition of 27 new landfill-free sites positions us well within reach of our 2020 goal and marks steady progress toward our aspiration to become a zero-waste company. We have increased our goal for the third time.

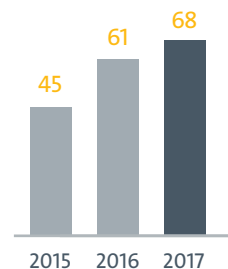
### Reduce VOC Emissions by 10 Percent

(kg/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 11 new certified wildlife habitats during 2017, thanks to the commitment and enthusiasm of our manufacturing employees and leadership. We are currently at 81 percent of our goal.

*\*Upon our divestiture of Opel and Vauxhall, GM used the GHG Protocol Corporate Accounting and Reporting Standard, published by WBCSD and WRI as a basis for our methodology for publicly reporting GHG.*

# 100%

Promote and engage community outreach on environmental and energy issues by completing an outreach activity at all plants on an annual basis.



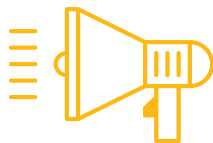
## OPERATIONS: MEASURE



**5 years**

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

### Energy Reduction



**3 years**

U.S. EPA ENERGY STAR® Climate  
Communications Award



**15**

U.S. EPA ENERGY STAR®  
Certified Facilities



**75**

U.S. EPA ENERGY STAR®  
Challenge for Industry Facilities



**31 plants**

U.S. Department of Energy  
Better Buildings, Better Plants  
Program



Global Climate  
“A”  
Leader for  
Water and  
Supply Chain

### Green Dealerships

**528**

PARTICIPATING DEALERS

**13%**

OF U.S. DEALERS

**91**

GREEN DEALER PROGRAM  
CERTIFICATIONS\*



\* These dealers met specific criteria for environmental performance. Visit [www.gmgreenddealer.com](http://www.gmgreenddealer.com) for details of the program.



## ACTIONS WE ARE TAKING

*Solar arrays at Bowling Green, Kentucky Assembly.*

### Make Progress Toward Our Renewable Energy Commitment

We have pledged to become 100 percent renewable by 2050

As GM works toward advancing zero-emissions vehicles, it makes business sense to create a cleaner grid on which to power them. That's why we have pledged to become 100 percent renewable by 2050. By the end of 2018, renewable energy will power 20 percent of GM's global electricity use. That milestone is due in part to two power purchase agreements to supply all of the electricity for our Ohio and Indiana manufacturing facilities—including those that build the Chevrolet Cruze and Silverado and GMC Sierra light-duty pickup trucks—with wind energy. The agreements, totaling 200 megawatts, double GM's existing 199.8 megawatts of sourced renewable energy capacity.

Reaching our renewable goal depends on a thriving renewable energy sector, which we are actively promoting. In early 2018, we became one of the first participants in a new renewable energy program for large businesses established by Consumers Energy, the state of Michigan's largest energy provider. Through this program, 100 percent of the electricity used at Flint Metal Center and Flint Engine operations is matched with wind power, which helps defray the cost of renewable energy for other consumers. "Corporations have a leadership opportunity to help accelerate and scale renewable energy, making it more accessible and affordable for everyone," said Dane Parker, Vice President, Global Facilities and Environment.

We are also a member of RE100, a global collaborative initiative backed by The Climate Group in partnership with CDP. RE100 brings together companies that have made commitments to use 100 percent renewable energy in their operations to share best practices and demonstrate the increased demand for clean power. GM is one of only three automakers, and the only one in North America, that has made the RE100 pledge.

Our commitment has inspired us to publicly share our renewable energy blueprint, a collection of best practices for accelerating and scaling a renewable energy plan. The blueprint outlines the four pillars of GM's renewable energy strategy:

#### *Focus First on Energy Efficiency*

By reducing energy use overall, there will be fewer electricity needs to be covered by renewable sources. GM uses an energy management system and performance contracts to achieve energy-reduction goals.

#### *Procure Renewable Energy*

GM's renewable energy mix combines physical and virtual power purchase agreements and onsite renewable energy projects, such as solar arrays and landfill gas projects. We continue to explore new opportunities, such as community solar.

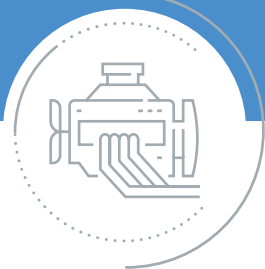
#### *Pursue Energy Storage*

GM has rich expertise in battery and fuel cell development, furthered by its operation of the largest battery systems lab of any North American automaker. This expertise enables holistic thinking to align GM's energy and product strategies. Additionally, as we explore ways to reuse our EV batteries as energy storage for our operations, we are integrating a more circular economy into our operations.

#### *Support Policy Decisions*

Working with utility stakeholders is a key to GM's energy and transportation strategies. Partnerships and collaborations, such as with the Business Renewables Center, also help influence policies that help grow corporate renewable energy use.



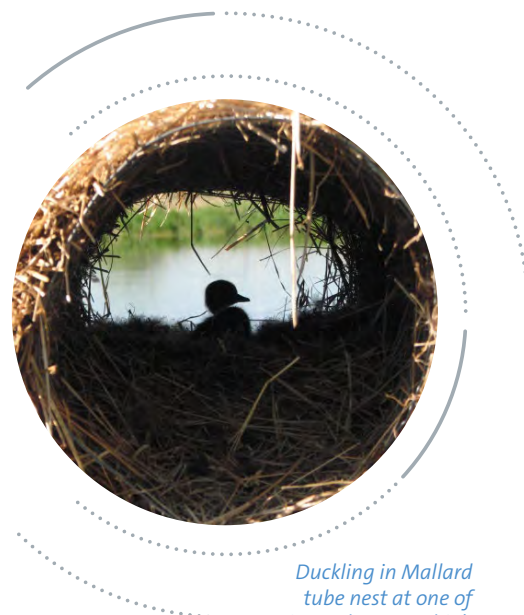


*GM Ecuador partners with the WWF Ecuador on an agro-forestry project that includes a community center for residents in the Amazon region.*

## Protect and Promote Biodiversity

GM aspires to achieve Conservation Certification from the Wildlife Habitat Council at all of its manufacturing sites by 2020. In 2017, 11 more sites achieved certification, bringing us to 80 percent of our goal. The newly certified sites are:

Flint Complex, USA	SGMW Baojun, China
Brownstown Battery, USA	GM Korea Changwon, Korea
Cruz Alta Proving Grounds, Brazil	Hanoi Plant, Vietnam
Ecuador, Quito, Ecuador	Egypt Plant, Egypt
Shanghai Campus, China	SGMW Chongqing, China
India Technical Center, India	



*Duckling in Mallard tube nest at one of Lansing Delta Township's wildlife habitat wetlands.*

## Set Benchmarks for Global Vehicle Manufacturing



*A bird's-eye view of the site of Shanghai GM's new Cadillac plant and PATAC's new R&D facility.*

The newly opened Cadillac plant in Shanghai, China not only has the capacity to produce 160,000 vehicles per year, but also serves as a green benchmark for vehicle manufacturing globally. The plant's body shop, paint shop and general assembly shop make use of advanced manufacturing technologies, such as fully automated production lines, and new techniques, including resistance spot welding and laser brazing of aluminum.

The paint shop is the only facility of its kind in China without a concrete chimney. The environmentally friendly spray booth exhaust treatment system and dry venturi scrubbers make the shop nearly 300 percent cleaner than conventional paint shops, with significantly reduced volatile organic compound (VOC) emissions and power consumption. The general assembly shop likewise introduced an industry-leading automatic exhaust collection and pumping system that substantially increases exhaust collection. The plant supports production of the Cadillac CT6 luxury sedan, which was introduced in China in 2017.



*Yingzhe Duan, a student at Texas A&M's College of Architecture, earned first place for her design of the imaginary Houston Museum of Waste. Students were challenged to use offal—a galvanized piece of thin sheet metal left over when stamping out car parts—in their designs.*

## Think Circular Across Our Value Chain

GM has long thought of waste as simply a resource out of place. As we manufacture, retire and recycle vehicles and their parts, we aim to see materials not only as they are, but also in terms of what they can become. This mindset allows us to find ways to improve in every aspect of our operations, such as reuse of 36,400 tons of dies and tools from our manufacturing process—a contribution to the 2 million tons of byproducts we recycle or reuse every year. Management of this material helps avoid over 7.5 million metric tons of CO<sub>2</sub> emissions, and much of this material is resold, generating hundreds of millions of dollars annually.

An even greener method than recycling unneeded materials is putting those materials to new use. We introduced this concept to students at Texas A&M University's College of Architecture, where we hosted a competition to design the Houston Museum of Waste, an imaginary 27,000-square-foot structure. Students had to incorporate offal—a galvanized piece of thin sheet metal left over when stamping out car parts—within the building's physical separation of its interior and exterior. Designs were judged by a committee of experts from GM, the U.S. Business Council for Sustainable Development and architectural groups. The project continues through a three-year grant, engaging multidisciplinary teams of faculty and graduate students on projects relating to the circular economy revolution, with GM serving as a partner and advisor.



## Reduce Ocean Plastic Pollution

GM, the Lonely Whale Foundation and other partners have joined forces to address ocean plastics and improve vital ocean ecosystems. Together they form NextWave, an open-source initiative working to develop the first commercial-scale, ocean-bound-plastics supply chain. NextWave will develop a model that reduces plastic pollution at scale and ensures the resulting supply chain has the infrastructure and support to meet demand in a socially and environmentally responsible way. The group hopes to divert more than 3 million pounds of plastics from entering the ocean within five years, the equivalent of keeping 66 million water bottles from washing out to sea.





*Girl Scouts repurpose trim scrap from vehicle sound absorbers into filler for archery targets.*

Circular-economy solutions can also provide societal benefits while sparking creativity. For example, we've upcycled Chevrolet Volt battery cases into bat boxes, nesting structures for endangered ducks and, most recently, into planter boxes for gardens. GM manufacturing leaders recently built 16 planters and donated them to organizations that serve people with special needs in Flint and Detroit.

GDC, a supplier that turns GM manufacturing byproducts such as used test tires and plastic packaging materials into vehicle parts, recently led a troop of Girl Scouts in Indiana to a project that repurposes trim scrap from vehicle sound absorbers into filler for archery targets. The troop took it a step further and considered a third life for the material. After about a year of use, the filling is returned to GDC, where it is recycled into air management components for a variety of Chevrolet vehicles. These molded plastic parts work to keep vehicle engines at their optimal temperature.

GM also continues to repurpose and recycle its office furniture and equipment in partnership with Green Standards and Herman Miller, achieving 99.7 percent waste diversion while providing usable materials for Michigan nonprofits.



To advance the circular economy, we need to collaborate with other industries and individuals, and think bigger and broader about secondary uses for the nation's waste streams. For us, it means considering homes for our byproducts beyond the manufacturing sector and encouraging others to apply the same mindset.

John Bradburn, GM Global Waste Reduction Manager



*Jaguars are among the diverse wildlife that lives in the Cuyabeno region, the area in the Amazon that GM Ecuador is helping to protect and conserve through its partnership with WWF Ecuador.*

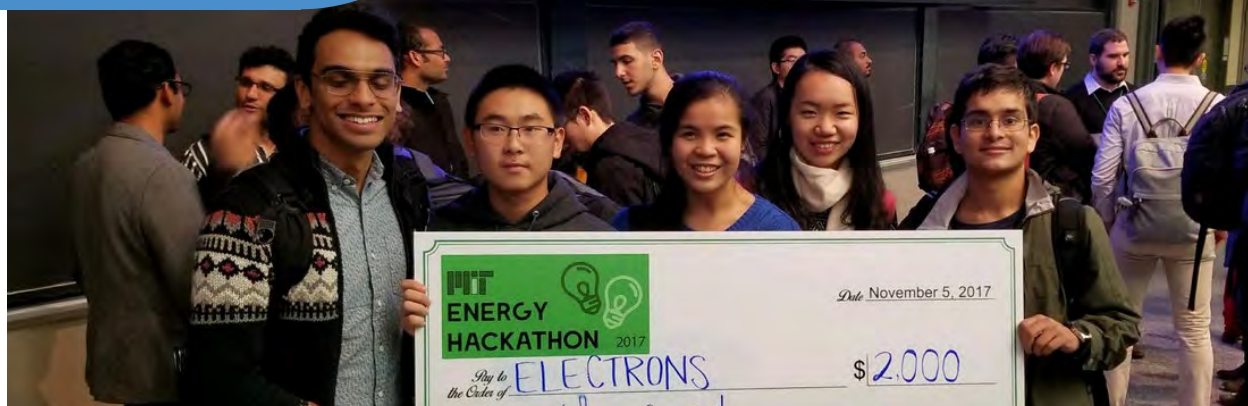
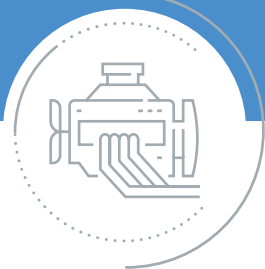
## Offset Emissions While Protecting Biodiversity

Protecting the rainforest might seem like an unlikely way for GM to offset its operational emissions—but at our plant in Quito, Ecuador, located in the heart of the Amazon region, it makes perfect sense. GM Ecuador and the World Wildlife Fund (WWF) have joined forces on a three-year conservation project that will symbolically offset emissions, create jobs and protect wildlife.

The first part of the project includes technical assistance for an agroforestry system for organic cocoa production. Cocoa is planted under the shade of existing native trees to optimize growth conditions. Through a partnership with a chocolate manufacturer, the cocoa also provides a sustainable source of income for the participating communities and reduces the exploitation of native forests for lumber. The program will support a total of 90 families in four indigenous communities and offset 8,500 tons of CO<sub>2</sub> equivalent per year.

GM and WWF are also working together to train community park rangers on conservation topics. We are educating rangers on the use of camera traps to record and follow up on endangered species found in the communities' extensive territory. The hidden cameras allow researchers to record the frequency at which species are spotted in a given area to determine places of risk. Rangers also learn to protect ecosystems by monitoring their territories for any illegal lumbering, fishing or gaming activities.





GM team *The Electrons* win first place in MIT's Energy Hackathon.

## Support Carbon Pricing Efforts

The business case for renewable energy and energy efficiency projects is made more robust when we consider existing and potential costs of emitting carbon. GM uses an internal carbon price that is an average of real values in our markets to help guide our investments. These real-world prices inform both our capital expenditures and planned energy efficiency projects in our manufacturing organization.

We are exploring ways to embed carbon pricing more deeply into our organization. To this end, we participated in MIT's Energy Hackathon, challenging teams to propose a strategy for GM to meet its energy and carbon goals through an internal carbon price. The Electrons, one of the three teams that worked on GM's challenge, won first prize in the competition, and their recommendations may inform our future internal pricing approach.

Externally, we participate in carbon schemes in markets where active programs exist. When we had operations in Europe, we were active in the European Emissions Trading Scheme for more than a decade. Today, we're participating in Korea's cap-and-trade system. In this market, operational improvements uncovered during an "energy treasure hunt" allowed us to reduce emissions by 400,000 tons CO<sub>2</sub>e. We converted these reductions into carbon credits on Korea's emissions trading market and sold them for a one-time payment of US\$8 million.

We recognize that carbon pricing solutions will vary from country to country. In the United States, we are a founding member of the Climate Leadership Council (CLC). The CLC's proposal is to put a tax on carbon that would be applied through the supply chain. While the cost would be passed through to consumers, the revenues generated by the tax would be returned to the public in the form of a dividend—a solution that makes sense to us.



### New Perspectives on Energy Efficiency

Drones could be the next tool in our quest to lower energy usage in GM facilities. Pilot programs at our Global Technical Center and Milford Proving Grounds in Michigan are utilizing custom-built drones equipped with LiDAR-sensing technology and infrared thermography to monitor building heating and cooling performance. Through the technology, GM facility technicians can monitor building performance on demand and see thermal signatures to improve the efficiency of heating and air conditioning units, among others. In addition to autonomous drones, GM has deployed drones at some manufacturing facilities to collect data that would otherwise pose a risk to humans. The drones collect images from high places like rooftops and tight, confined spaces, such as pipes and paint ovens, among others. Data collected helps us plan repairs and install new equipment, for example.



## Drive Energy Efficiency Throughout Our Facilities

We are always looking for new ways to reduce the energy and water required to build our vehicles and the waste produced as a result. When we operate more efficiently, we not only lessen our environmental impact—we realize significant cost savings.

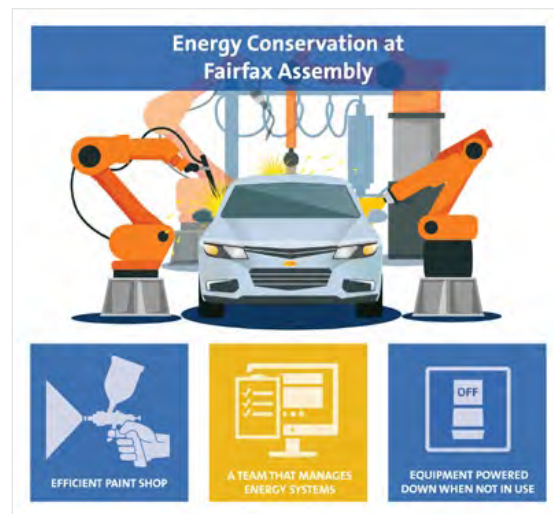
GM uses a variety of ENERGY STAR initiatives as a framework for charting our progress. ENERGY STAR's Building Portfolio Manager (BPM) allows us to benchmark our progress and make continuous improvements. BPM integrates with our utility bill management system, sending an automated monthly analysis of building scores to evaluate building performance.

ENERGY STAR building certifications recognize buildings that are top performers in terms of energy efficiency. In 2017, we earned certification for 17 buildings and three assembly plants, including our Fairfax, Kansas, plant for the first time. The distinction is not easy for plants to attain; the Fairfax facility is the only manufacturing plant in Kansas to earn the certification in nearly a decade. The achievement came through adopting a new paint process that uses 40 percent less energy per vehicle, automatically shutting down equipment that is not in use and replacing existing lights with LEDs. GM also enrolled all of our global manufacturing facilities in the ENERGY STAR Challenge for Industry, which calls for industrial sites to reduce energy intensity by 10 percent over five years. A total of 133 facilities met the challenge in 2017, more than any other participating company.

An important way we find ongoing energy-saving opportunities is through “energy treasure hunts,” another ENERGY STAR concept that relies on the insight of those who know our operations best: our manufacturing employees. During energy treasure hunts, a team of participants methodically visits different areas of a facility during periods of operation and shutdown, then proposes potential areas for improvement.



GM's Gravatai Assembly in Brazil met the EPA ENERGY STAR Challenge for Industry by reducing energy intensity by 12.8 percent in less than two years.



General Motors' Fairfax Assembly plant, home of the Chevrolet Malibu, earned ENERGY STAR certification from the U.S. Environmental Protection Agency, signifying it meets strict energy performance levels.



### Collaborate for Better Buildings

The U.S. Department of Energy's Better Buildings SWAP initiative challenged General Motors and L'Oréal to find energy-efficiency opportunities in each other's facilities. See what we learned when we switched places in this video series:

[Watch the SWAP](#)





## OPERATIONS: ACT



*Treasure Hunt showing HID lamps (Orange look) to LED (Cool white look) in GPS Tonawanda, New York.*

GM has been performing energy treasure hunts for 11 years at global sites and conducted 10 treasure hunts in 2017 in India, Korea, North America and Thailand. The treasure hunt at our Bupyeong facility in Korea was particularly successful. The team focused on ways to improve the paint process and use of compressed air, identifying 41 opportunities for improvement. Of these recommendations, 27 were implemented—leading to US\$5 million in annual savings.

In-person treasure hunts are now getting a boost from Energy OnStar (EoS), GM's proprietary system for tracking facility energy use. EoS monitors 41 GM facilities in North and South America and is being used to develop virtual treasure hunt maps that highlight areas for investigation, including HVAC operations, equipment shutdown, space and discharge temperatures, sensor issues, leaky valves and faulty damper positions.

GM also uncovers energy savings with the help of university students and the Environmental Defense Fund (EDF)'s Climate Corps. In 2017, a team of two EDF fellows found energy-saving opportunities at a new replacement paint shop that delivered \$383,000 in annual savings. The opportunities included installing motion-sensing light switches in areas with low foot traffic, creating a checklist for operators to follow at the end of each shift and putting equipment into maintenance mode, which uses less power, when not in use.

### Energy Savings by the Numbers

**15%**  
Energy Intensity  
Reduction  
SINCE 2010

**\$135 million**  
in Cost Savings in 2017  
EQUIVALENT TO SALE OF  
143,000 VEHICLES

**\$22 million**  
Invested in Energy  
Efficiency Projects  
NORTH AMERICA 2017

**20%** Reduction in Energy Use  
2016-2017 GRAND BLANC CENTER  
MICHIGAN BATTLE OF THE BUILDINGS WINNER

**4.03 MMBTU**  
Energy Required per  
Vehicle Assembled  
AN ALL-TIME LOW

**Winner**  
Pollution Prevention Award  
KANSAS DEPARTMENT OF HEALTH  
FAIRFAX ASSEMBLY PLANT

**7th**  
year

**ENERGY STAR**  
AWARD 2018  
**PARTNER OF THE YEAR**  
Sustained Excellence



*Brownstown Battery in Michigan maintains five storm ponds that support wetland vegetation and wildlife.*

## Ride the Wave of Water Conservation

GM is committed to finding ways to not only reduce water used in our operations, but to extend the benefits of more efficient processes to others. For example, we recently finished our first full year reusing stormwater for process water at the Detroit Hamtramck Assembly plant. The savings equate to nearly \$2 million per year for GM. The savings also benefit the city of Detroit: by creating a pond to collect stormwater, we reduce stormwater discharge. Some of the collected water is sent to Detroit Renewable Power, where it is turned into steam that heats and cools the assembly plant and 145 other Detroit businesses. GM is looking to replicate this concept at other sites with similar environmental conditions.

We are communicating best practices by leading a water benchmarking workshop within the Automotive Industry Action Group, which recently resulted in a white paper for OEMs. In addition, working with the Water Environment & Reuse Foundation, Arcadis and other industry partners,

GM shared details on our water reduction and reuse initiatives. Our input helped form a framework for successful implementation of on-site water reuse in industrial applications.

GM also joined more than 900 other organizations in the Better Buildings Challenge, setting a goal to reduce our water intensity by 20 percent by 2020 in 31 U.S. plants. We met the goal four years early, reducing water intensity by 28.3 percent against a 2010 baseline.



*One of the stormwater retention ponds on the grounds of Detroit-Hamtramck Assembly.*

*GM was recognized on the 2017 CDP Water A-List for effective water management practices implemented around the world.*







# COMMUNITY

ASPIRATION: SAFE, SMART & SUSTAINABLE COMMUNITIES

WHAT WE ASPIRE TO: SAFE, SMART & SUSTAINABLE COMMUNITIES .....	143
OUR MANAGEMENT APPROACH TO COMMUNITY .....	144
WHAT WE MEASURE .....	148
ACTIONS WE ARE TAKING	
Introduce New STEM Partnerships .....	149
Engage Students in Autonomous Vehicle Development .....	150
Foster Children’s Creativity Year-Round .....	150
Support STEM Students in Our Hometown Community .....	151
Celebrate Five Years of Enhancing Communities and Changing Lives .....	152
Use Surplus Materials to Build a New Kind of Neighborhood .....	153
Bring Sustainability to Employees’ Backyards .....	153
Promote Education for Youth Across China .....	154
Help Kids in China Ride Safe .....	154
Connect Our Brands to Causes That Matter .....	155



## COMMUNITY: ASPIRE

### WHAT WE ASPIRE TO:

#### 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. Our mutual long-term success is interdependent with these communities as we share many of the same natural resources and depend upon a local workforce of talented individuals. We have a strategic interest in that workforce being well-educated, particularly in the areas of science, technology, engineering and math (STEM), given the increasing level of advanced technology in the automotive industry. Our business viability also has both direct and indirect impacts on local economic vitality in the form of providing jobs and contributing to the local tax base.

# OUR MANAGEMENT APPROACH TO

## COMMUNITY



We know we do well by doing good. That's why we work to ensure that community programs are embedded in our decision-making and business processes around the world. Our social impact strategy accelerates our efforts by placing a sharp focus on investments that create sustainable economic growth around the world. At the same time, it provides an approach that allows us to create and measure positive social change and business outcomes. Our strategy is built around three key pillars: STEM education, vehicle and road safety, and sustainable communities. For each of these pillars, we employ a four-step social impact framework to determine areas where we have the most potential for impact:

### KEY TAKEAWAYS

- > Our social impact strategy creates sustainable, measurable economic growth through three pillars: STEM education, vehicle and road safety and sustainable communities. Across each pillar, we use a four-step social impact framework to maximize our investments.
- > The United States lags other nations in its pipeline of STEM talent, particularly among women and minorities. GM is involved in hundreds of STEM initiatives to help reverse this trend.
- > GM's STEM education initiatives cover four main emerging areas of the "STEM Impact Compass," including: Immersive Learning, Computational Thinking, Artificial Intelligence and Digitization of Education.
- > We provide education and training to help reduce vehicle-related injuries and fatalities.
- > We invest in developing sustainable communities across the world and near our hometown headquarters in Detroit, Michigan.

1. **Analyze**—Look at the landscape of a problem to understand root causes and existing pain points. Determine how GM as a business can uniquely contribute.
2. **Assess and Align**—Use a decision-making tool to determine what programs we will continue to support and scale, what new types of programs we will support, and what programs no longer fit our priorities.
3. **Activate**—Identify specific social impact outcomes and solicit programs that will help us achieve those outcomes.
4. **Measure and Evaluate**—Quantify the impact of programs and map impact to each social outcome.

Potential partners also use this framework when applying for grants. Based on the pillar with which an organization is aligned, each applicant must explain the indicators and social outcomes that their program will address. This alignment ensures our community investments are used to make quantifiable positive impacts in their respective focus areas.







## GM Pillar Impact Strategy

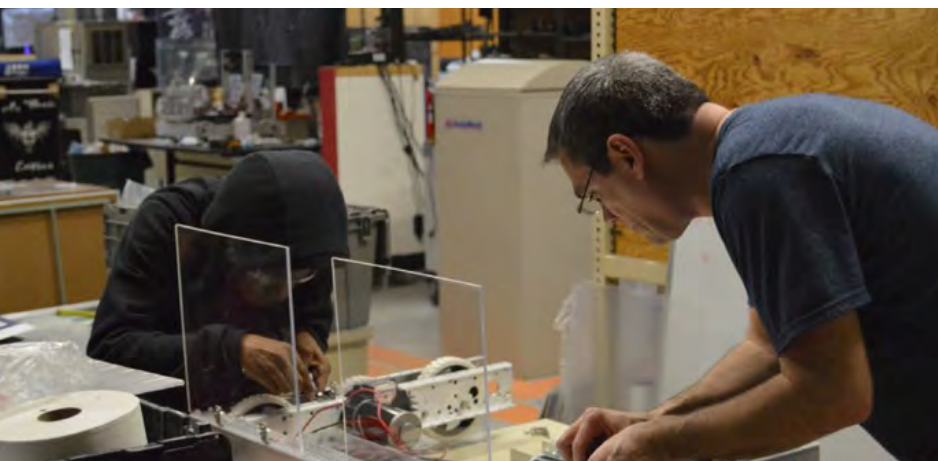
	STEM EDUCATION <i>Advancing Education in Science, Technology, Engineering and Mathematics (STEM) Subjects</i>	VEHICLE & ROAD SAFETY <i>Fueling Safer Practices In and Around Vehicles</i>	SUSTAINABLE COMMUNITIES <i>Strengthening Neighborhoods and Empowering Residents</i>
Target Indicator	Number of students with employable labor skills for careers in STEM	The reduction of vehicle-related injuries and deaths	The number of youth and adults who have the requisite skills for employment and decent jobs
Social Outcomes	Increase in students who earn a STEM degree that matches market needs ..... Increase in the presence, achievement and persistence for underrepresented minorities in STEM fields ..... Increase in supply of qualified teachers for teacher training in STEM-related subjects	Increase in seat belt and restraint usage ..... Decrease in distracted driving ..... Increase in awareness, knowledge and skills of vehicle and road safety	Increase in education levels and/or marketable technical and vocational skills ..... Increase in the number of high school students who are college ready ..... Support neighborhood revitalization and urban renewal programs
Program Population	Third–12th grade and college students, with a special emphasis on women and minorities	Parents, grandparents, young drivers and children	The poorest districts and neighborhoods within select global communities

### STEM Education

Technological innovation is driving a sea change in the automotive industry. Today's vehicles have tens of millions of lines of digital code and integrate thousands of parts. This makes STEM education more important than ever to training the workforce of tomorrow. Yet too few students are pursuing STEM-related education and degrees, leading to a looming talent gap for our future workforce.

This gap exists at all levels of education, especially in the U.S. A 2016 report by the National Science Foundation revealed that nearly half of all first degrees awarded in China are in STEM fields, while in the U.S., only about one in three are. The problem begins much earlier than higher education, however. The Trends in International Mathematics and Science Study, for example, reports lagging scores for U.S. students as early as fourth grade. By high school, according to the Programme for International Student Assessment, the U.S. ranks 38th out of 71 countries in math ability, and 30th among the 35 Organization for Economic Cooperation and Development member countries.

Gaps between men and women, and between whites and minorities, also are significant. As the number of white students who earned STEM degrees grew 15 percent in the last five years, the number of black students fell by roughly the same margin, according to the US News/Raytheon STEM Index, 2016. Women lag behind men overall in exam scores and in the number of STEM degrees granted. In the U.S., only 18 percent of computer science majors and 10 percent of information security professionals are women.



Members of the GM FIRST Robotics team.





*Through the GM/Girls Who Code partnership, girls from underserved communities will gain increased access to computer science education, mentorship and projects that demonstrate the real-world impact of computing that significantly increases young girls' interest in pursuing technology and engineering degrees.*

Given the strategic importance of STEM education to the long-term sustainability of our business, GM and our employees are involved in more than 100 STEM education initiatives around the world annually. We choose initiatives and partners using a research-based analysis of various challenges, such as teacher shortages, quality of teaching and learning, high attrition rates for underrepresented minorities, low student engagement and inequities and inequalities in STEM education. The programs are in four emerging areas with the potential to drive transformative solutions, which make up what we call the STEM Impact Compass:

- > **Immersive Learning**—Hands-on experiences that encourage active participation and drive engagement
- > **Computational Thinking**—Developing analytical, multidisciplinary and transferable skills like problem-solving and experimentation
- > **Artificial Intelligence**—Exploring AI-powered technologies with the potential to facilitate teaching and learning
- > **Digitization of Education**—Using online and digital tools and resources to transform how learning is delivered and experienced inside and outside the classroom

### *Vehicle and Road Safety*

In keeping with GM's value that safety and quality are foundational commitments, the second focus area of our strategy guides us to support global efforts to increase safe practices in and around vehicles. We

know motor vehicle crashes are the number one cause of unintentional death among children ages 5–19. Further, six teens ages 16–19 die every day from motor vehicle injuries. Our focus is on parents, grandparents, young drivers and children.

Through education and training, we aim to reduce the number of vehicle-related injuries and deaths by increasing the number of drivers and passengers who use seat belts and restraints, decreasing the number of distracted drivers, raising awareness of road safety issues and improving the knowledge and skills of those behind the wheel.

### *Sustainable Communities*

Our third focus area encompasses our efforts to enhance the quality of life in our communities around the world. We believe that for people to successfully live, learn, work and play within their communities, they need access to transit, good jobs and safe, walkable places to live. These three ingredients—mobility, employability and livability—comprise what we call the social mobility ecosystem and guide our efforts to build sustainable communities. Through investments in long-term solutions GM will enable mobility that goes well beyond vehicles, creating upward economic mobility for many.

- > **Mobility**—As long as people must physically move to access opportunities, they will need access to reliable and affordable modes of transportation. GM believes in a world made better by sharing. Yet economic and physical access remain barriers to use of shared mobility solutions by everyone. That's



## COMMUNITY: MANAGE

why we're working with partners that increase access to and utilization of reliable, affordable, smart and innovative transportation options that are likely to facilitate social inclusion. Investing in public transit benefits not only the people who use it; research shows that for every dollar invested in public transportation, a community generates \$4 in economic returns.

› **Employability**—A second essential element for building sustainable communities is employability. Today, there are half a million unfilled jobs in IT fields, and hundreds of thousands more will need to be filled soon. Yet too many people lack access to resources to help them develop career aspirations and prepare for today's world of work, such as high-performing schools, guidance counselors, career offices and connections to individuals with successful careers. GM aims to increase opportunities for Americans of any age, in any part of the country and from any background to be trained for jobs with promising career paths. We work with partners that help people develop skills in language literacy and proficiency, trades, advanced manufacturing, technology and sales and marketing.

› **Livability**—Closely related to the opportunities offered by expanding mobility options is the demand for walkable, transit-oriented communities. While populations in walkable urban and suburban areas are growing rapidly, there are only 21 adequate, affordable and available units for every 100 extremely low-income renter households nationwide. GM can help address this imbalance by working with partners that use Smart Growth as an urban planning strategy to increase positive enablers that make up a community's quality of life. This includes improving a community's neighborhood infrastructure, housing stabilization, revitalization and school improvement projects; and creating child- and family-safe places for recreation and play.

Though we strive to have a positive impact where we do business, the cyclical nature of the automotive industry can impact a community in the opposite manner. When business downsizing or plant closures are necessary, we work diligently with local governments and other entities to minimize economic and social disruption. In Australia, for example, where engineering operations were downsized and vehicle manufacturing were discontinued at the end of 2017, we contributed AUD15 million to a reskilling and training program to assist staff leaving Holden. We also established transition centers at each of Holden's sites to offer a suite of support services, training and ongoing career guidance for departing employees.



*Girls Who Code participants.*

## WHAT WE MEASURE

### COMMUNITY

#### STEM Education

**101**  
Grants

**22,421**  
Students  
Participating in  
STEM-related Activities

**30,162**  
Students Mentored  
Through Global  
Environmental  
Education Programs

#### Vehicle & Road Safety



**\$2.3 million**  
Contributed

**257**  
Volunteer Hours

**1,800**  
Schools in 26 China Cities  
Approximately 120,000 Children  
Safe Kids Worldwide Partnership

**\$2.0  
million**  
COMMUNITY IMPACT  
GRANTS

**\$40.3  
million**  
TOTAL  
CORPORATE GIVING

Sustainable  
Communities

#### Employee Volunteer Giving



**266**  
Nonprofits/  
Groups Impacted



**161,508**  
Volunteer Hours



**18,501**  
Volunteers

#### Disaster Relief



**\$2.7 million**  
Disaster Relief

**140,000+**  
Emergency Calls  
Handled OnStar & Red Cross  
Partnership







## ACTIONS WE ARE TAKING

### Introduce New STEM Partnerships

GM's new STEM Impact Compass is helping us identify partnerships that best leverage our own capabilities and have the greatest possible impact on the communities they support. We recently announced funding for four innovative programs designed to encourage young people to go into technology and engineering professions and improve teacher training in STEM-related subjects:

> **Code.org** has enabled 10 percent of K-12 students across the world to try the site's courses and the Hour of Code. Today, 9 million girls are learning to code on Code.org, and 48 percent of online course participants are underrepresented minorities. GM's support is helping Code.org train 1,400 computer science teachers who teach over 40,000 secondary students across the U.S.

> **Black Girls Code** is dedicated to increasing the number of women of color in technology careers. GM is helping Black Girls Code expand exposure to coding and technology to underrepresented girls in the Detroit area.

> **Institute of Play** is a New York City-based organization that pioneers new models of learning and engagement through the design of learning experiences that are rooted in the principles of game design. The Institute is developing an eight-month professional development fellowship for middle and high school STEM educators focused on the power of games, play and digital tools to transform both teacher practice and student engagement.

> **Digital Promise** was created to accelerate innovation in education and improve opportunities to learn. GM is supporting a research study and development of an online microcredential curriculum for teachers in computational thinking. Microcredentials combine in-person and online learning and allow educators to earn online "badges" of expertise in new areas.

We extended our support throughout the year by partnering with DonorsChoose, surprising five teachers who posted their hands-on ideas to teach STEM topics ranging from alternative energy to bacterial growth. In addition to fully funding the teachers' projects, each teacher was awarded a \$5,000 DonorsChoose.org gift card to bring their most creative STEM ideas to life in the classroom. With these gifts, GM helped DonorsChoose reach over 40,000 students in 330 schools.



There are now more job openings in Detroit for computer programmers than there are in manufacturing. GM needs skilled STEM talent—and that's why we're on a mission to help build the next generation of STEM leaders, including women.

Mary Barra, GM Chairman and CEO

*Above: General Motors volunteers help second- through sixth-grade students at Detroit International Academy during a STEM-focused activity in celebration of the GM—Black Girls Code partnership and the launch of a Detroit chapter in Detroit, Michigan.*





## Engage Students in Autonomous Vehicle Development

GM is partnering across industries to advance autonomous driving technology. Now, we're getting university engineering students involved with a three-year autonomous vehicle design competition in collaboration with SAE International. The AutoDrive Challenge's technical goal is to achieve SAE's definition of Level IV automation, the point at which a vehicle can handle most dynamic driving tasks with minimal human intervention.

Eight North American universities are participating. Students are working with real-world applications of sensing technologies, computing platforms, software design implementation and advanced computation methods such as computer vision, pattern recognition, machine learning, artificial intelligence, sensor fusion and autonomous vehicle controls.



2017 Chevrolet Bolt EV.

GM has provided each team with a Chevrolet Bolt EV as the vehicle platform, and strategic partners and suppliers are aiding the students in their technology development by providing vehicle parts and software. Throughout the competition, students and faculty will be invited to attend technology-specific workshops to help them refine their concepts and better understand technical aspects of autonomous vehicles.

## Foster Children's Creativity Year-Round



100 second- and third-graders attended GM Korea's Summer Camp for Gifted Children.

As we work to build a pipeline of STEM talent, we understand that learning doesn't stop when the school year ends. That's the idea behind a summer creative camp for children of low-income families, sponsored by the GM Korea Employee Foundation. The camp included experiential programs to promote creative and logical thinking, such as lectures by gifted education specialists, a group project constructing three-dimensional figures by solving mathematics and science tasks, and a "Brain Story" session designed to develop mathematical thinking and creative problem-solving skills. Participants were 100 second- and third-graders from elementary schools in Seoul, Incheon and Gyeonggi-do.



*General Motors TutorMate volunteer David Aller poses for a photo with his student Elijah.*

## Support STEM Students in Our Hometown Community

GM aims to promote STEM interest and education among young people across the nation and the world. We have a special interest, however, in developing pathways to STEM degrees and careers in our hometown community of Detroit, Michigan. There's never been a better time for us to do so: According to the Detroit Regional Chamber, Detroit outpaces the nation in information technology job growth and is expected to continue the pace through 2025.

We hope that local youth will be ready to fill many of these jobs, thanks in part to several programs spearheaded by GM. These programs support students from elementary school through high school, and are based on the notion that formative educational moments can happen outside of standard classroom instruction—whether a mentor introduces a child to a new career path or simply shows that they care.

First-grade students in low-income Detroit communities were matched with 70 GM employees through TutorMate, the nation's preeminent online volunteer tutoring program. Students and tutors met weekly by phone throughout the school year, working through lessons aimed at improving literacy skills and building self-esteem at the same time.

Over the summer, more than 300 GM volunteers donated their time and talent at a new STEM camp for students in second through fifth grade in the Cody Rouge community. We partnered with the Detroit Public Schools Community District (DPSCD), the Detroit Area Pre-College Engineering Program (DAPCEP) and Michigan Science Center in

the effort. Students were exposed to basic science concepts through hands-on activities such as making nitrogen ice cream, creating balloon rocket cars and building roller coasters for marbles. The GM Women Community Outreach Group facilitated an activity called Manufacturing Engineering in a Box, in which students cast metal GM medallions and learned what manufacturing and metal melting is all about.

In addition, during National Volunteer Week, children of GM employees learned about STEM education and careers on our annual Bring Your Kid to Work Day. Volunteers guided GM parents and their children through interactive modules that demonstrated aerodynamics, gravity, friction, engine usage and more. More than 3,000 children visited the Warren Tech Center, and more than 330 employees volunteered to ensure they had a great experience.

GM's support for Detroit's youth continues when students enter high school, exemplified by the group of GM engineers who lead FIRST Robotics teams at the Detroit Hispanic Development Corporation. Each mentor spends a minimum of 200 hours volunteering with local high school students in Michigan's FIRST Robotics program, including after work and on weekends. During the season, mentors and students work on building robots and equipping them with performance capabilities such as shooting balls, climbing ropes and delivering gears. FIRST's mission is to inspire young people to become science and technology leaders by engaging them in exciting mentor-based programs that build skills, inspire innovation and foster self-confidence, communication and leadership.



## Celebrate Five Years of Enhancing Communities and Changing Lives

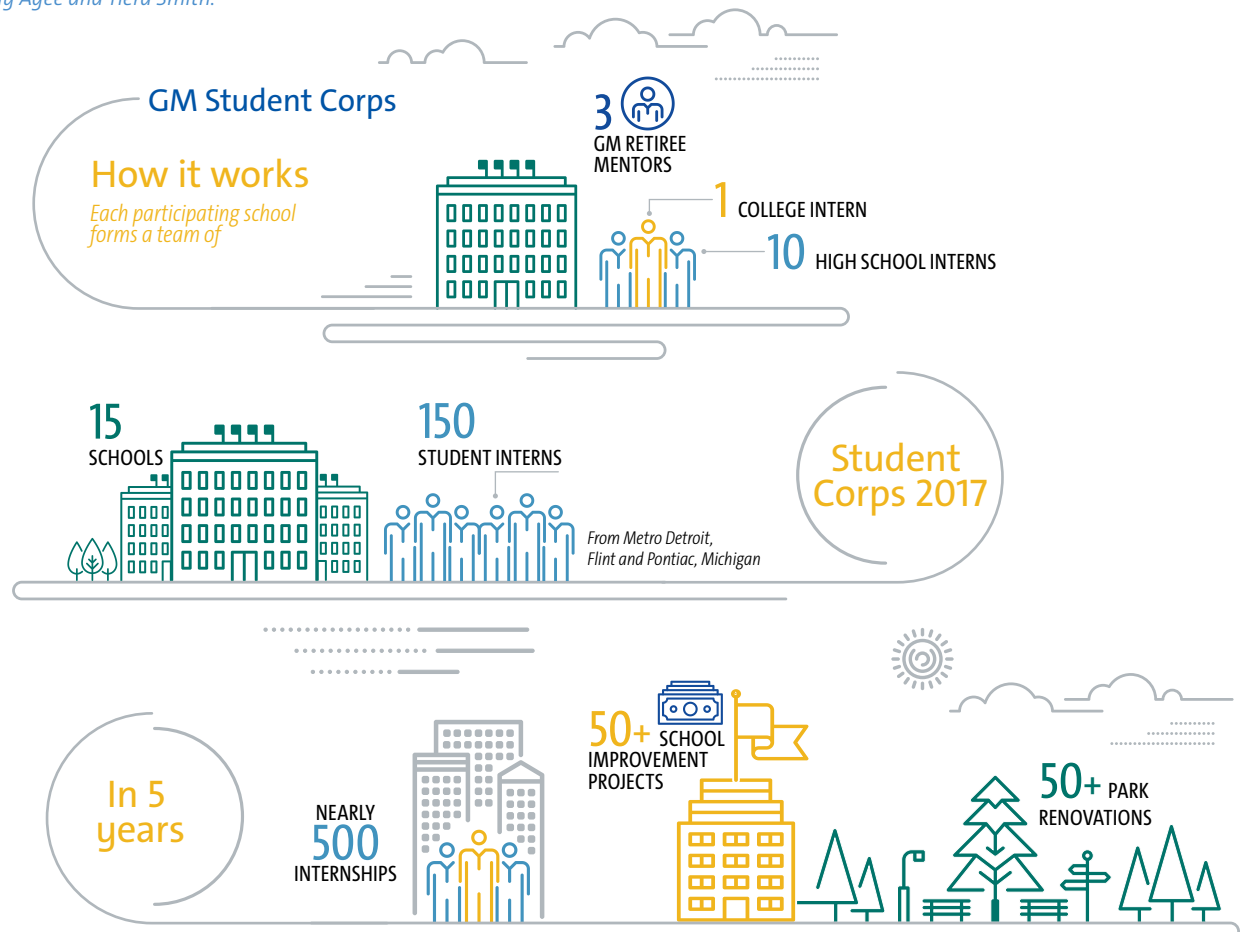
In 2017, GM Student Corps celebrated its fifth and largest year of helping young people in underserved school districts transform their communities and jumpstart their futures through paid internships, life skills training and career and college preparation. An extension of GM's commitment to education, Student Corps matches teams of high school interns with retired GM executives and college interns to plan and execute community service projects, usually at schools and parks. The students manage all aspects of their projects, from budgeting, planning and troubleshooting to meeting deadlines.

Five years in, members of the original Student Corps cohort have graduated, entered college and are making a return to the program as mentors for new classes of students. In 2017, five school groups had a college intern who participated in the program as a high schooler.

Among them is Brittany Agee, a graduate of the Academy of Public Leadership at Detroit's Cody Campus. Agee is now a junior at Alabama State University and credits GM Student Corps for her ability to persevere through personal losses in her childhood, finish high school and enroll in college—where she's working toward a goal of becoming a social worker. To understand the power of the GM Student Corp program, watch [Brittany's story](#).



*This year, five former Student Corps high school interns have returned to the program to serve as college mentors. Clockwise, from left: Sadeeqe Mohamed, Alkami Bilic, Mikaylia Holland, Brittany Agee and Tiera Smith.*







## Use Surplus Materials to Build a New Kind of Neighborhood

The Michigan Urban Farming Initiative (MUFI) recently unveiled America's first sustainable urban "agrihood," an alternative neighborhood growth model in Detroit's lower North End that positions agriculture as the centerpiece of a mixed-use urban development. Totalling about three acres, the volunteer-run space features a bustling two-acre urban garden, a 200-tree fruit orchard, a children's sensory garden and more. The urban garden provides fresh, free produce to about 2,000 nearby households.

GM helped make this innovative neighborhood concept possible through our relationship with Green Standards, a firm that connects companies with surplus resources to local nonprofits. We donated excess office furniture, as well as vehicle insulation scrap that will be repurposed for wall and ceiling insulation. This reuse of materials will help make MUFI's headquarters one of the most sustainable buildings in Detroit. It is also expected to bring millions in investment to the area, strengthening the community that GM calls home.

---

## Bring Sustainability to Employees' Backyards



The national nonprofit Living Lands & Waters began its MillionTrees Project in 2007 by collecting and planting acorns. The group harvests growing saplings and partners with communities and companies like GM to meet its ambitious goal—growing 1 million trees across the United States. In 2017, 27 GM facilities in seven states took part, providing more than 25,000 oak trees to employees and their families for Earth Day and Arbor Day plantings. Milford Proving Ground alone distributed 3,500 trees, with the goal of not only educating today's GM team, but also showing a commitment to the next generation.

"The MillionTrees Project allows our employees to see firsthand that their actions can make a difference," says Brenda Korth, lead environmental engineer at Milford Proving Ground. "It is not just about planting a single tree, it is about building momentum to change the way people think about environmental efforts, both at work and in their personal lives." GM has reserved 15,000 trees to distribute in 2018.



### Promote Education for Youth Across China

We know that a child can be inspired to work hard in school or pursue a new career path when they have someone to show them the way. Many of GM China's volunteer efforts in 2017 centered on providing education and resources to children and young people, delivering a continuum of opportunity that extends from kindergarten classrooms to university lecture halls.

The support begins in early childhood through programs such as the Village Kindergarten project, through which GM employees travel halfway across China to work with children in rural Qinghai who lack access to quality education. GM also supported kids in need through donation of books, winter coats and scholarships.

For school-age children, GM helped organize events that enforce classroom learning and inspire students to begin thinking about potential career paths. Examples include the Aerospace Robotic Camp for primary school students and children of GM employees in Shanghai; the Promise One Cup of Water program, designed to increase children's environmental awareness; and the Automotive Youth Educational Course, a vocational training program launched through our SAIC-GM joint venture.

GM China continues to engage young people as they enter universities and begin their careers. ICCG, SAIC-GM's creative platform for university students, hosted the third annual Automobile Outlook Design and Advertising Creation Competition at Hunan University. SAIC-GM also sponsors a scholarship for journalists to take a three-month course in economics and law.

### Help Kids in China Ride Safe

Car crashes are a leading cause of injury and death for young children in China. Each day, at least 30 families are involved in crashes and 10 children die in traffic accidents. Many of these tragedies are preventable. According to a recent survey of parents in Shanghai, 70 percent of parents have car seats, but only about a third use them every time their child rides in a vehicle, despite evidence that car seats significantly reduce risk of injury and death.

One reason parents report for not using car seats is that they find them difficult to install. GM China, along with Safe Kids Worldwide, is committed to changing this perception and increasing parents' knowledge of how to keep their children safe in and around vehicles. We are doing this through the Safe Kids Safe Ride partnership, now in its fourth year in China.



#### GM China 2017 CSR Recognition

##### CSR LEADERSHIP AWARD

*American Chamber of Commerce Shanghai*

##### TOP EMPLOYER CHINA 2018

*Top Employers Institute*

##### TEN-YEAR HONORS AWARD

*China Business Network*

##### BEST CSR AWARD

*Southern Weekly Newspaper*

##### SUSTAINABILITY BEST PRACTICE AWARD

*Corporate Innovation and Urban  
Sustainability Excellence Awards*

##### GOLD CERTIFICATION

*Wildlife Habitat Council*

##### BEST INNOVATION PRACTICE IN CHINA

*Yicai Media Group*

##### CONTRIBUTOR TO DEVELOPMENT OF CHINA 6 EMISSION STANDARDS

*Vehicle Emission Control Center,  
Ministry of Environmental Protection*





## COMMUNITY: ACT



*Safe Kids, a GM sponsored program, is celebrating 20 years of the Buckle Up Program, one of their major road safety outreach initiatives.*

The 2017 program officially kicked off with training for employees provided by Safe Kids Worldwide. Employees then became the trainers themselves, speaking with parents at local kindergartens, hosting an installation workshop at a Chevrolet dealership, and leading a seminar to refresh parents' knowledge after new traffic regulations took effect in Shanghai. The Chevrolet team also participated in the United Nations' Global Road Safety Week initiative, hosting demonstrations to teach parents about topics such as proper car seat installation, heatstroke, teen driving, and backover and frontover accidents.

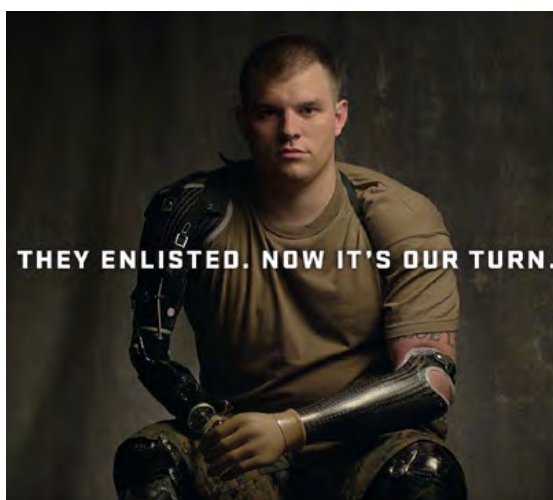
With the support of hundreds of volunteers, Safe Kids Safe Ride has reached 1,800 schools in 26 cities and more than 120,000 children and parents in China. The program was recognized with a CSR Program Award at the sixth annual China Corporate Social Responsibility Ceremony in Beijing.

## Connect Our Brands to Causes That Matter

A key part of building brand loyalty is to demonstrate shared values with our customers. Our brands around the world have initiatives in place that enable them to do good, while connecting with new and existing customers through common causes.



Since 2011, Chevrolet has helped the American Cancer Society raise more than \$7.7 million to fund efforts in breast cancer research, education for health care professionals, screening guidelines and promotion for early detection. Chevrolet and GM employees and dealers also support Making Strides Against Breast Cancer walks through event sponsorships, team participation, customer engagement and other activities.



*GMC is a proud sponsor of the Building For America's Bravest (BFAB) program, which helps build smart homes for catastrophically injured service members. Many injured veterans return to homes that were not built with their new circumstances in mind, making everyday tasks difficult. Smart features, like motorized doors and automated thermostats, can help. GMC's pledges are helping BFAB reach its goal of building 200 smart homes nationwide and raising awareness for injured veterans.*



The Cadillac House in New York City hosted a series of intimate musical performances in collaboration with Global Citizen. At each event, a selected social entrepreneur received an inaugural Global Citizen Accelerator Award honoring leading social entrepreneurs who are driving systemic change and creating solutions to global problems. Winners received \$10,000 grants to continue their work and implement meaningful change around the world.



# GRI Content Index

## GENERAL DISCLOSURES

Disclosure Number	Description	Reference/Response
<b>Organizational Profile</b>		
102-1	Name of the organization	Cover
102-2	Activities, brands, products, and services	Corporate Profile
102-3	Location of headquarters	Detroit, Michigan
102-4	Location of operations	Corporate Profile; 2017 Form 10-K pages 2, 16
102-5	Ownership and legal form	General Motors is a publicly held corporation incorporated in the state of Delaware. Our shares trade on the New York Stock Exchange and Toronto Stock Exchange.
102-6	Markets served	Corporate Profile; 2017 Form 10-K pages 2-3
102-7	Scale of the organization	Corporate Profile; 2017 Form 10-K page 46
102-8	Information on employees and other workers	Talent—Measure The majority of our workforce is comprised of GM employees. There are no significant variations in employment numbers.
102-9	Supply chain	Supply Chain—Manage Supply Chain—Measure
102-10	Significant changes to the organization and its supply chain	2017 Form 10-K page 1
102-11	Precautionary Principle or approach	GM does not follow the precautionary approach, but has a comprehensive risk management plan in place.
102-12	External initiatives	<ul style="list-style-type: none"> <li>• CDP</li> <li>• Business for Innovation Climate &amp; Energy Policy (BICEP) Coalition</li> <li>• United Nations Global Compact</li> <li>• U.S. Business for Climate Action</li> </ul>
102-13	Membership of associations	We work with automotive industry groups in many countries in which we operate, including, but not limited to Alliance of Automobile Manufacturers' Association (AAM), and the Federal Chamber of Automotive Industries (FCAI) in Australia. Examples of other associations we work with include the Engine Manufacturers Association, Diesel Technology Forum, Electric Drive Transportation Association, Battery Electric Vehicle Coalition, and the Fuel Cell & Hydrogen Energy Association.
<b>Strategy</b>		
102-14	Statement from senior decision-maker	CEO Message
102-15	Key impacts, risks, and opportunities	2017 Form 10-K pages 10-16 Vehicle Efficiency & Emissions—Manage Operations—Act
<b>Ethics and integrity</b>		
102-16	Values, principles, standards, and norms of behavior	Aspirations, Governance & Ethics
102-17	Mechanisms for advice and concerns about ethics	Supply Chain—Manage and Governance & Ethics—Act
<b>Governance</b>		
102-18	Governance structure	Governance & Ethics
102-19	Delegating authority	Governance & Ethics—Manage
102-20	Executive-level responsibility for economic, environmental, and social topics	Governance & Ethics—Manage
102-21	Consulting stakeholders on economic, environmental, and social topics	Governance & Ethics—Manage
102-22	Composition of the highest governance body and its committees	Governance & Ethics—Measure; GM 2018 Proxy Statement pages 7-16, 23

# GRI Content Index

## GENERAL DISCLOSURES

Disclosure Number	Description	Reference/Response
102-23	Chair of the highest governance body	GM 2018 Proxy Statement pages 11, 21
102-24	Nominating and selecting the highest governance body	GM 2018 Proxy Statement pages 9-10; General Motors Company Board of Directors Corporate Governance Guidelines pages 3-4
102-25	Conflicts of interest	GM 2018 Proxy Statement pages 29-31; General Motors Company Board of Directors Corporate Governance Guidelines pages 7-9, 11
102-26	Role of highest governance body in setting purpose, values, and strategy	GM 2018 Proxy Statement pages 20-21
102-27	Collective knowledge of highest governance body	GM 2018 Proxy Statement page 29
102-28	Evaluating the highest governance body's performance	GM 2018 Proxy Statement page 29; General Motors Company Board of Directors Corporate Governance Guidelines page 11
102-29	Identifying and managing economic, environmental, and social impacts	Governance & Ethics—Manage
102-30	Effectiveness of risk management processes	Governance & Ethics—Manage; GM 2018 Proxy Statement page 27
102-31	Review of economic, environmental, and social topics	GM 2018 Proxy Statement page 26
102-32	Highest governance body's role in sustainability reporting	Governance & Ethics—Manage; GM 2018 Proxy Statement page 26
102-33	Communicating critical concerns	<a href="http://www.gm.com/investors/corporate-governance.html">http://www.gm.com/investors/corporate-governance.html</a>
102-34	Nature and total number of critical concerns	2018 GM Proxy Statement page 36
102-35	Remuneration policies	GM 2018 Proxy Statement pages 17-19, 35-67; General Motors Company Board of Directors Corporate Governance Guidelines page 10
102-36	Process for determining remuneration	GM 2018 Proxy Statement pages 17-19, 35-67; General Motors Company Board of Directors Corporate Governance Guidelines page 10
102-37	Stakeholders' involvement in remuneration	GM 2018 Proxy Statement page 17
102-38	Annual total compensation ratio	GM 2018 Proxy Statement pages 35-67
102-39	Percentage increase in annual total compensation ratio	GM 2018 Proxy Statement pages 35-67
<b>Stakeholder engagement</b>		
102-40	List of stakeholder groups	Stakeholder Engagement
102-41	Collective bargaining agreements	2017 Form 10-K page 8
102-42	Identifying and selecting stakeholders	Stakeholder Engagement
102-43	Approach to stakeholder engagement	Stakeholder Engagement
102-44	Key topics and concerns raised	Stakeholder Engagement
<b>Reporting practice</b>		
102-45	Entities included in the consolidated financial statements	2017 Form 10-K page 1
102-46	Defining report content and topic Boundaries	Reporting Practices
102-47	List of material topics	Reporting Practices
102-48	Restatements of information	Any restatements, and reasons for such, are footnoted as part of the data presentation within the body of the report.
102-49	Changes in reporting	Changes have been noted in footnotes where applicable.
102-50	Reporting period	Reporting Practices
102-51	Date of most recent report	Reporting Practices
102-52	Reporting cycle	Reporting Practices

# GRI Content Index

## GENERAL DISCLOSURES

Disclosure Number	Description	Reference/Response
102-53	Contact point for questions regarding the report	<a href="mailto:gm.sustainability@gm.com">gm.sustainability@gm.com</a>
102-54	Claims of reporting in accordance with the GRI Standards	Reporting Practices
102-55	GRI content index	Reporting Practices
102-56	External assurance	Reporting Practices

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response
<b>GRI 201: Economic Performance</b>		
103-1	Explanation of the material topic and its Boundary	CEO Message; Products; 2017 Form 10-K page 18
103-2	The management approach and its components	CEO Message; Products; 2017 Form 10-K page 18
103-3	Evaluation of the management approach	CEO Message; Products; 2017 Form 10-K page 18
201-1	Direct economic value generated and distributed	2017 Form 10-K pages 18, 46
201-2	Financial implications and other risks and opportunities due to climate change	Products—Manage; Operations—Act; 2017 Form 10-K pages 5-8
201-3	Defined benefit plan obligations and other retirement plans	2017 Form 10-K pages 70-71
201-4	Financial assistance received from government	GM did not receive any significant financial assistance from any government in 2017.
<b>GRI 204: Procurement Practices</b>		
103-1	Explanation of the material topic and its Boundary	Supply Chain
103-2	The management approach and its components	Supply Chain
103-3	Evaluation of the management approach	Supply Chain
204-1	Proportion of spending on local suppliers	Supply Chain—Measure The term “local suppliers” refers to suppliers operating in the country where a GM plant is located.
<b>GRI 205: Anti-corruption</b>		
103-1	Explanation of the material topic and its Boundary	Governance & Ethics
103-2	The management approach and its components	Governance & Ethics
103-3	Evaluation of the management approach	Governance & Ethics
205-1	Operations assessed for risks related to corruption	Governance & Ethics All operations are assessed for risks related to corruption. No significant risks have been identified.
205-2	Communication and training about anti-corruption policies and procedures	Governance & Ethics—Act
205-3	Confirmed incidents of corruption and actions taken	Allegations of corruption/bribery are formally investigated to conclusion. The investigation results are provided to pertinent stakeholders for remediation and corrective action.
<b>GRI 302: Energy</b>		
103-1	Explanation of the material topic and its Boundary	Products; Operations
103-2	The management approach and its components	Products; Operations
103-3	Evaluation of the management approach	Products; Operations



# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response																																				
302-1	Energy consumption within the organization	<table> <tr> <th>Energy Consumption</th><th>GJ</th><th>Comment</th></tr> <tr> <td>Total fuel consumption from nonrenewable sources</td><td>2014: 37,356,179 2015: 35,297,119 2016: 34,444,439 2017: 30,313,931</td><td>Includes all facility fuel for process and facility heat. Includes Natural Gas, LPG, Coke, Oil and Diesel. Does not include landfill gas.</td></tr> <tr> <td>Total fuel consumption from renewable sources</td><td>2014: 927,092 2015: 1,187,937 2016: 2,981,123 2017: 1,118,454</td><td>Includes landfill gas use and renewable electricity generated from solar and wind or purchased under a Purchase Power Agreement</td></tr> <tr> <td>Total electricity consumption</td><td>2014: 33,092,273 2015: 32,086,922 2016: 33,364,403 2017: 29,778,155</td><td>Nonrenewable electricity</td></tr> <tr> <td>Heating consumption</td><td>N/A</td><td>Included in total fuel consumption</td></tr> <tr> <td>Cooling consumption</td><td>N/A</td><td>Included in electricity</td></tr> <tr> <td>Steam consumption</td><td>2014: 4,532,758 2015: 4,663,710 2016: 4,105,376 2017: 1,610,934</td><td>Purchased steam and delivered heat, including purchased steam from renewable sources</td></tr> <tr> <td>Electricity sold</td><td>20,232</td><td></td></tr> <tr> <td>Heating sold</td><td>N/A</td><td></td></tr> <tr> <td>Cooling sold</td><td>N/A</td><td></td></tr> <tr> <td>Steam sold</td><td>N/A</td><td></td></tr> <tr> <td>Total energy consumption</td><td>2014: 75,908,302 2015: 73,235,689 2016: 74,895,341 2017: 62,801,243</td><td></td></tr> </table>	Energy Consumption	GJ	Comment	Total fuel consumption from nonrenewable sources	2014: 37,356,179 2015: 35,297,119 2016: 34,444,439 2017: 30,313,931	Includes all facility fuel for process and facility heat. Includes Natural Gas, LPG, Coke, Oil and Diesel. Does not include landfill gas.	Total fuel consumption from renewable sources	2014: 927,092 2015: 1,187,937 2016: 2,981,123 2017: 1,118,454	Includes landfill gas use and renewable electricity generated from solar and wind or purchased under a Purchase Power Agreement	Total electricity consumption	2014: 33,092,273 2015: 32,086,922 2016: 33,364,403 2017: 29,778,155	Nonrenewable electricity	Heating consumption	N/A	Included in total fuel consumption	Cooling consumption	N/A	Included in electricity	Steam consumption	2014: 4,532,758 2015: 4,663,710 2016: 4,105,376 2017: 1,610,934	Purchased steam and delivered heat, including purchased steam from renewable sources	Electricity sold	20,232		Heating sold	N/A		Cooling sold	N/A		Steam sold	N/A		Total energy consumption	2014: 75,908,302 2015: 73,235,689 2016: 74,895,341 2017: 62,801,243	
Energy Consumption	GJ	Comment																																				
Total fuel consumption from nonrenewable sources	2014: 37,356,179 2015: 35,297,119 2016: 34,444,439 2017: 30,313,931	Includes all facility fuel for process and facility heat. Includes Natural Gas, LPG, Coke, Oil and Diesel. Does not include landfill gas.																																				
Total fuel consumption from renewable sources	2014: 927,092 2015: 1,187,937 2016: 2,981,123 2017: 1,118,454	Includes landfill gas use and renewable electricity generated from solar and wind or purchased under a Purchase Power Agreement																																				
Total electricity consumption	2014: 33,092,273 2015: 32,086,922 2016: 33,364,403 2017: 29,778,155	Nonrenewable electricity																																				
Heating consumption	N/A	Included in total fuel consumption																																				
Cooling consumption	N/A	Included in electricity																																				
Steam consumption	2014: 4,532,758 2015: 4,663,710 2016: 4,105,376 2017: 1,610,934	Purchased steam and delivered heat, including purchased steam from renewable sources																																				
Electricity sold	20,232																																					
Heating sold	N/A																																					
Cooling sold	N/A																																					
Steam sold	N/A																																					
Total energy consumption	2014: 75,908,302 2015: 73,235,689 2016: 74,895,341 2017: 62,801,243																																					
302-2	Energy consumption outside of the organization	1,283,882,121 GJ This accounts for energy used in direct and indirect auto parts supply. We have also used USEEIO-LCA Standards to calculate this value. Source of conversion factors used are purchased goods and services and capital goods.																																				
302-3	Energy intensity	Operations—Measure 1.96 MWH/vehicle This is based on the production of 8,898,697 vehicles and includes all of our energy sources. The boundary for this is within the scope of our organization.																																				
302-4	Reduction of energy consumption	2,652,620 GJ All types of facility energy were included in the reductions. The basis for calculation is absolute reduction from activities in 2017. Standards, methodologies and assumptions used were good engineering practices.																																				
302-5	Reductions in energy requirements of products and services	Products 2,764,987 GJ Reductions in energy consumption of our products can be contributed to increased production of electric vehicles versus internal combustion engine vehicles. Rationale for this calculation includes increased efficiencies of Chevrolet Bolt EV and Volt as compared to the Chevrolet Cruze. Standards, methodologies, assumptions, and calculation tools used can be found at <a href="https://www.fueleconomy.gov">https://www.fueleconomy.gov</a>																																				
<b>GRI 303: Water</b>																																						
103-1	Explanation of the material topic and its Boundary	Operations																																				
103-2	The management approach and its components	Operations																																				
103-3	Evaluation of the management approach	Operations																																				

# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response														
303-1	Water withdrawal by source	GM measures and monitors 100 percent of our major facilities water withdrawals by source using either invoices or meter data.														
		<table><tr><th>Withdrawal Source</th><th>(M3)</th></tr><tr><td>Surface Water</td><td>—</td></tr><tr><td>Groundwater</td><td>2,839,337</td></tr><tr><td>Rainwater</td><td>960</td></tr><tr><td>Wastewater</td><td>—</td></tr><tr><td>Municipal water supplied</td><td>36,652,919</td></tr><tr><td>Total</td><td>37,493,216</td></tr></table>	Withdrawal Source	(M3)	Surface Water	—	Groundwater	2,839,337	Rainwater	960	Wastewater	—	Municipal water supplied	36,652,919	Total	37,493,216
		Withdrawal Source	(M3)													
		Surface Water	—													
		Groundwater	2,839,337													
		Rainwater	960													
		Wastewater	—													
		Municipal water supplied	36,652,919													
Total	37,493,216															
303-2	Water sources significantly affected by withdrawal of water	No water sources were significantly affected by withdrawal of water by GM.														
303-3	Water recycled and reused	Reporting is based on engineering estimates and meter data.														
		<table><tr><th>Metric</th><th>(M3)</th></tr><tr><td>Total volume of water recycled and reused</td><td>16,497,015</td></tr><tr><td>Percentage of total water withdrawal</td><td>44%</td></tr></table>	Metric	(M3)	Total volume of water recycled and reused	16,497,015	Percentage of total water withdrawal	44%								
		Metric	(M3)													
		Total volume of water recycled and reused	16,497,015													
Percentage of total water withdrawal	44%															
GRI 305: Emissions																
103-1	Explanation of the material topic and its Boundary	Products; Operations														
103-2	The management approach and its components	Products; Operations														
103-3	Evaluation of the management approach	Products; Operations														
305-1	Direct (Scope 1) GHG emissions	Baseline year in 2010, which was the first full year of operation as the new General Motors Corporation, and includes all facilities under GM operational control. Calculation includes CO2, CH4, N2O, HFCs, PFCs, SF6 and NF3. Reporting is based on GHG Protocol, and the source of emission factors is regulatory or IPCC Good Practice Guidelines. Recalculation of base year emissions is due to the divestiture of our European business.														
		<table><tr><th></th><th>Metric tons CO2e</th></tr><tr><td>Gross direct emissions</td><td>1,848,804</td></tr></table>		Metric tons CO2e	Gross direct emissions	1,848,804										
			Metric tons CO2e													
Gross direct emissions	1,848,804															
305-2	Energy indirect (Scope 2) GHG emissions	Baseline year in 2010, which was the first full year of operation as the new General Motors Corporation, and includes all facilities under GM operational control. Calculation includes CO2, CH4, N2O, HFCs, PFCs, SF6 and NF3. Reporting is based on GHG Protocol, and the source of emission factors is regulatory or IPCC. Recalculation of base year emissions is due to the divestiture of our European business.														
		<table><tr><th></th><th>Metric tons CO2e</th></tr><tr><td>Gross location-based indirect emissions</td><td>4,572,791</td></tr><tr><td>Gross market-based indirect emissions</td><td>4,191,893</td></tr></table>		Metric tons CO2e	Gross location-based indirect emissions	4,572,791	Gross market-based indirect emissions	4,191,893								
			Metric tons CO2e													
		Gross location-based indirect emissions	4,572,791													
Gross market-based indirect emissions	4,191,893															
305-3	Other indirect (Scope 3) GHG emissions	Calculation includes CO2, CH4, N2O, HFCs, PFCs, SF6 and NF3. Reporting is based on GHG Protocol, and the source of emission factors is regulatory or IPCC. Base year for calculation is 2016 when Scope 3 emissions were 320,789,810 Tons CO2e. Recalculation of base year emissions is due to the divestiture of our European business.														
		<table><tr><th></th><th>Metric tons CO2e</th></tr><tr><td>Gross other indirect emissions</td><td>286,310,319</td></tr></table>		Metric tons CO2e	Gross other indirect emissions	286,310,319										
			Metric tons CO2e													
Gross other indirect emissions	286,310,319															

# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response																				
305-4	GHG emissions intensity	0.68 metric tons CO2e/vehicle Calculated on the basis of 8,898,697 production vehicles; includes Scope 1 and 2 emissions and all GHG gases.																				
305-5	Reduction of GHG emissions	255,800 metric tons CO2 Calculated using GHG Protocol on the basis of vehicle emission reduction targets since 2016; includes all GHG gases in Scope 1 and 2 emissions. We use internal project tracking tools to obtain this data.																				
305-6	Emissions of ozone-depleting substances (ODS)	0.5 metric tons Calculation includes R-402A, R-22, R-141B, R-113, R-123, R-502, R-401A, R-12, R-409A. Figures represent actual emissions; if actual emission data was not available, an emission factor of 8.5 percent of the total equipment charge by refrigerant was used to estimate emissions. The 8.5 percent rate is based on the median range of leakage rates estimates provided by the IPCC Good Practice Guidelines and Uncertainty Management in National Greenhouse Gas Inventories (2000).																				
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx) and other significant air emissions	VOC emissions are composed of the following emission units: ELPO, Primer, Topcoat, Final Repair and Cleaning Solvents, which are considered the major sources of VOC emissions, such as maintenance painting, sealers, etc. These data include data from some GM JVs. VOC (k-tons): 21.8 NOx (metric tons): 1,388 SOx (metric tons): 26																				
GRI 306: Effluents and Waste																						
103-1	Explanation of the material topic and its Boundary	Operations																				
103-2	The management approach and its components	Operations																				
103-3	Evaluation of the management approach	Operations																				
306-1	Water discharge by quality and destination	Typically, effluent is treated via biological or physical/chemical methods, and in some instances by both. Water quality data is based on analytical testing. <table><tr><th>Quality of the water, including treatment method</th><th>(Reported in Million m3)</th></tr><tr><td>Direct discharge (to surface water body)</td><td>13.1</td></tr><tr><td>Indirect discharge (to treatment facility)</td><td>24.2</td></tr><tr><td>Discharge to groundwater</td><td>0.1</td></tr></table>	Quality of the water, including treatment method	(Reported in Million m3)	Direct discharge (to surface water body)	13.1	Indirect discharge (to treatment facility)	24.2	Discharge to groundwater	0.1												
Quality of the water, including treatment method	(Reported in Million m3)																					
Direct discharge (to surface water body)	13.1																					
Indirect discharge (to treatment facility)	24.2																					
Discharge to groundwater	0.1																					
306-2	Waste by type and disposal method	Includes hazardous and nonhazardous waste from manufacturing operations and some nonmanufacturing and JV facilities, excluding event waste from construction, demolition and remediation. Event waste is recycled to the greatest extent possible and tracked separately. Waste figures may also include vendor tooling used to produce proprietary GM parts. <table><tr><th>Disposal Method</th><th>(in k-tons to the nearest whole number)</th></tr><tr><td>Reuse</td><td>139</td></tr><tr><td>Recycling</td><td>1,874</td></tr><tr><td>Composting</td><td>3</td></tr><tr><td>Recovery, including energy recovery</td><td>67</td></tr><tr><td>Incinerating (mass burn)</td><td>23</td></tr><tr><td>Deep well injection</td><td>minimal</td></tr><tr><td>Landfill</td><td>322</td></tr><tr><td>On-site storage</td><td>minimal</td></tr><tr><td>Other (includes microwaving, enclaves, plasma processing and other treatments)</td><td>13</td></tr></table>	Disposal Method	(in k-tons to the nearest whole number)	Reuse	139	Recycling	1,874	Composting	3	Recovery, including energy recovery	67	Incinerating (mass burn)	23	Deep well injection	minimal	Landfill	322	On-site storage	minimal	Other (includes microwaving, enclaves, plasma processing and other treatments)	13
Disposal Method	(in k-tons to the nearest whole number)																					
Reuse	139																					
Recycling	1,874																					
Composting	3																					
Recovery, including energy recovery	67																					
Incinerating (mass burn)	23																					
Deep well injection	minimal																					
Landfill	322																					
On-site storage	minimal																					
Other (includes microwaving, enclaves, plasma processing and other treatments)	13																					



# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response
306-3	Significant spills	There were no significant spills in 2017.
306-4	Transport of hazardous waste	<p>4,409 Tons Hazardous waste transported</p> <p>Zero hazardous waste imported</p> <p>Zero hazardous waste exported</p> <p>112 Tons hazardous waste treated</p> <p>0% hazardous waste shipped internationally</p> <p>Waste shipments are weighed and reported directly into centralized data reporting tool (GMR2) based on actual shipment weight. In the event actual weight is not available, internal procedures are in place to estimate &amp;/or calculate weight based on standard industry practice.</p> <p>–Data provided is for US only</p> <p>–Hazardous Waste is defined based on USEPA Regulation</p> <p>– Data does not include remediation, construction, demolition, which is consistent with our sustainability waste reporting</p> <p>–Treatment is conducted offsite and can consist of – Solidification/ Stabilization, Thermal treatment, Wastewater treatment, Other waste treatment or transfer to a Waste Broker.</p>
<b>GRI 308: Supplier Environmental Assessment</b>		
103-1	Explanation of the material topic and its Boundary	Supply Chain
103-2	The management approach and its components	Supply Chain
103-3	Evaluation of the management approach	Supply Chain
308-1	New suppliers that were screened using environmental criteria	100 percent of new suppliers are screened for environmental criteria.
308-2	Negative environmental impacts in the supply chain and actions taken	Supply Chain—Measure Supply Chain—Act
<b>GRI 401: Employment</b>		
103-1	Explanation of the material topic and its Boundary	Talent
103-2	The management approach and its components	Talent
103-3	Evaluation of the management approach	Talent
401-1	New employee hires and employee turnover	<p>6,673 Global Salaried Candidates Hired</p> <p>4.7 percent Total Turnover Rate</p> <p>4.1 percent Volunteer Turnover Rate</p>

# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response																						
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	<p>The table below summarizes differences in GM benefits between full-time and part-time employees in areas such as health care, retirement savings, life insurance, disability coverage and wellness programs in select programs.</p> <table><tr><th>Country</th><th>Benefits</th></tr><tr><td>Canada</td><td>Health Care Spending Account/Wellness contribution for part-time employee is 50 percent of that of a full-time employee</td></tr><tr><td>China</td><td>Life Insurance (death in service), Accidental Death and Dismemberment (AD&amp;D), Termination</td></tr><tr><td>Egypt</td><td>Medical</td></tr><tr><td>Greece</td><td>Termination Indemnity, Long-Term Disability</td></tr><tr><td>Japan</td><td>Life Insurance (death in service), Accidental Death and Dismemberment, Long-term Disability, Termination</td></tr><tr><td>Mexico</td><td>None</td></tr><tr><td>South America</td><td>None</td></tr><tr><td>South Korea</td><td>Life Insurance (death in service), Accidental Death and Dismemberment, Long-Term Disability, Short-Term Disability, Termination</td></tr><tr><td>U.S.</td><td>None</td></tr><tr><td>Vietnam</td><td>Termination Indemnity</td></tr></table>	Country	Benefits	Canada	Health Care Spending Account/Wellness contribution for part-time employee is 50 percent of that of a full-time employee	China	Life Insurance (death in service), Accidental Death and Dismemberment (AD&D), Termination	Egypt	Medical	Greece	Termination Indemnity, Long-Term Disability	Japan	Life Insurance (death in service), Accidental Death and Dismemberment, Long-term Disability, Termination	Mexico	None	South America	None	South Korea	Life Insurance (death in service), Accidental Death and Dismemberment, Long-Term Disability, Short-Term Disability, Termination	U.S.	None	Vietnam	Termination Indemnity
Country	Benefits																							
Canada	Health Care Spending Account/Wellness contribution for part-time employee is 50 percent of that of a full-time employee																							
China	Life Insurance (death in service), Accidental Death and Dismemberment (AD&D), Termination																							
Egypt	Medical																							
Greece	Termination Indemnity, Long-Term Disability																							
Japan	Life Insurance (death in service), Accidental Death and Dismemberment, Long-term Disability, Termination																							
Mexico	None																							
South America	None																							
South Korea	Life Insurance (death in service), Accidental Death and Dismemberment, Long-Term Disability, Short-Term Disability, Termination																							
U.S.	None																							
Vietnam	Termination Indemnity																							
401-3	Parental leave	<p>Talent—Manage</p> <p>All U.S. salaried employees receive parental leave benefits. In 2017, there were 1,192 U.S. eligible employees of whom 255 were female and 937 were male.</p>																						
GRI 402: Labor/Management Relations																								
103-1	Explanation of the material topic and its Boundary	Talent																						
103-2	The management approach and its components	Talent																						
103-3	Evaluation of the management approach	Talent																						
402-1	Minimum notice periods regarding operational changes	Nearly all of our labor agreements call for regular meetings between top union officials and local GM management. We also have formal processes in place to notify all workers of work stoppages.																						
GRI 403: Occupational Health and Safety																								
103-1	Explanation of the material topic and its Boundary	Talent																						
103-2	The management approach and its components	Talent																						
103-3	Evaluation of the management approach	Talent																						

# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response																											
403-1	Workers representation in formal joint management—worker health and safety committees	100 percent of workers under collective bargaining agreements are represented in formal joint management worker health and safety committees. Talent																											
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Safety—Measure																											
403-3	Workers with high incidence or high risk of diseases related to their occupation	GM is unaware of any diseases related to the nature of our business.																											
403-4	Health and safety topics covered in formal agreements with trade unions	Safety—Manage																											
GRI 404: Training and Education																													
103-1	Explanation of the material topic and its Boundary	Talent																											
103-2	The management approach and its components	Talent																											
103-3	Evaluation of the management approach	Talent																											
404-1	Average hours of training per year per employee	13.12 hours																											
404-2	Programs for upgrading employee skills and transition assistance programs	Talent—Act																											
404-3	Percentage of employees receiving regular performance and career development reviews	100 percent of salaried employees receive regular performance and career development reviews.																											
GRI 405: Diversity and Equal Opportunity																													
103-1	Explanation of the material topic and its Boundary	Talent																											
103-2	The management approach and its components	Talent																											
103-3	Evaluation of the management approach	Talent																											
405-1	Diversity of governance bodies and employees	Talent—Measure; Governance—Measure Board makeup as of June 12, 2018 <table><tr><th colspan="3">Board of Directors—Gender</th></tr><tr><th>Male</th><th colspan="2">Female</th></tr><tr><td>6</td><td colspan="2">5</td></tr><tr><th colspan="3">Board of Directors—Age Group</th></tr><tr><th>Under 30 Years</th><th>30-50 Years</th><th>50+ Years</th></tr><tr><td>0</td><td>0</td><td>11</td></tr><tr><th colspan="3">Board of Directors—Diversity</th></tr><tr><th>White</th><th>African-American</th><th>Latino</th></tr><tr><td>9</td><td>1</td><td>1</td></tr></table>	Board of Directors—Gender			Male	Female		6	5		Board of Directors—Age Group			Under 30 Years	30-50 Years	50+ Years	0	0	11	Board of Directors—Diversity			White	African-American	Latino	9	1	1
Board of Directors—Gender																													
Male	Female																												
6	5																												
Board of Directors—Age Group																													
Under 30 Years	30-50 Years	50+ Years																											
0	0	11																											
Board of Directors—Diversity																													
White	African-American	Latino																											
9	1	1																											
405-2	Ratio of basic salary and remuneration of women to men	Salary information is based on annual salaries for the global salaried workforce. Executive Level (base salary only): Female to Male ratio is 97.5 percent. Management Level (base salary only): Female to Male ratio is 100.5 percent. Nonmanagement Level (base salary only): Female to Male ratio is 97.7 percent.																											



# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response
<b>GRI 407: Freedom of Association and Collective Bargaining</b>		
103-1	Explanation of the material topic and its Boundary	Talent; Supply Chain
103-2	The management approach and its components	Talent; Supply Chain
103-3	Evaluation of the management approach	Talent; Supply Chain
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	We have not identified any GM operations or Tier I suppliers for risks of this nature.
<b>GRI 408: Child Labor</b>		
103-1	Explanation of the material topic and its Boundary	Supply Chain
103-2	The management approach and its components	Supply Chain
103-3	Evaluation of the management approach	Supply Chain
408-1	Operations and suppliers at significant risk for incidents of child labor	We have not identified any GM operations or Tier I suppliers for risks of this nature.
<b>GRI 409: Forced or Compulsory Labor</b>		
103-1	Explanation of the material topic and its Boundary	Supply Chain
103-2	The management approach and its components	Supply Chain
103-3	Evaluation of the management approach	Supply Chain
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	We have not identified any GM operations or Tier I suppliers for risks of this nature.
<b>GRI 410: Security Practices</b>		
103-1	Explanation of the material topic and its Boundary	Governance & Ethics
103-2	The management approach and its components	Governance & Ethics
103-3	Evaluation of the management approach	Governance & Ethics
410-1	Security personnel trained in human rights policies or procedures	100 percent of security personnel have completed Code of Conduct training, which includes human rights policies and procedures.
<b>GRI 414: Supplier Social Assessment</b>		
103-1	Explanation of the material topic and its Boundary	Supply Chain
103-2	The management approach and its components	Supply Chain
103-3	Evaluation of the management approach	Supply Chain
414-1	New suppliers that were screened using social criteria	100 percent of Tier I suppliers have expectations for social criteria outlined in our purchase contract terms and conditions. Supply Chain—Measure
414-2	Negative social impacts in the supply chain and actions taken	We have not identified any Tier I suppliers for risks of this nature.
<b>GRI 416: Customer Health and Safety</b>		
103-1	Explanation of the material topic and its Boundary	Safety; Personal Mobility
103-2	The management approach and its components	Safety; Personal Mobility
103-3	Evaluation of the management approach	Safety; Personal Mobility
416-1	Assessment of the health and safety impacts of product and service categories	100 percent of our vehicles are assessed for health and safety impacts.
416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	2017 Form 10-K pages 23-24, 71-76

# GRI Content Index

## TOPIC-SPECIFIC DISCLOSURES

Disclosure Number	Description	Reference/Response
<b>GRI 418: Customer Privacy</b>		
103-1	Explanation of the material topic and its Boundary	Governance & Ethics; Personal Mobility
103-2	The management approach and its components	Governance & Ethics; Personal Mobility
103-3	Evaluation of the management approach	Governance & Ethics; Personal Mobility
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	GM received no material complaints during 2017.
<b>GRI 419: Socioeconomic Compliance</b>		
103-1	Explanation of the material topic and its Boundary	Products; Safety; Personal Mobility; Governance & Ethics
103-2	The management approach and its components	Products; Safety; Personal Mobility; Governance & Ethics
103-3	Evaluation of the management approach	Products; Safety; Personal Mobility; Governance & Ethics
419-1	Non-compliance with laws and regulations in the social and economic area	2017 Form 10-K pages 23-24, 71-76

General Motors is a member of the United Nations Global Compact, which endorses a framework of principles in the areas of human rights, labor, the environment, and anti-corruption. We are committed to these principles and are actively implementing them as detailed in this report.

## HUMAN RIGHTS

UNGC Principle	Report Links
1. Businesses should support and respect the protection of internationally proclaimed human rights.	<a href="#">Supply Chain</a> <a href="#">Talent</a> <a href="#">Governance &amp; Ethics</a>
2. Businesses should make sure that they are not complicit in human rights abuses.	<a href="#">Supply Chain</a> <a href="#">Talent</a> <a href="#">Governance &amp; Ethics</a>

## LABOR STANDARDS

UNGC Principle	Report Links
3. Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.	<a href="#">Talent</a>
4. Businesses should uphold the elimination of all forms of forced and compulsory labor.	<a href="#">Supply Chain</a>
5. Businesses should uphold the effective abolition of child labor.	<a href="#">Supply Chain</a>
6. Businesses should uphold the elimination of discrimination in respect of employment and occupation.	<a href="#">Supply Chain</a> <a href="#">Talent</a>

## ENVIRONMENT

UNGC Principle	Report Links
7. Businesses should support a precautionary approach to environmental challenges.	<a href="#">Operations</a> <a href="#">Products</a>
8. Businesses should undertake initiatives to promote greater environmental responsibility.	<a href="#">Operations</a> <a href="#">Products</a>
9. Businesses should encourage the development and diffusion of environmentally friendly technologies.	<a href="#">Operations</a> <a href="#">Products</a>

## ANTI-CORRUPTION

UNGC Principle	Report Links
10. Businesses should work against corruption in all its forms, including extortion and bribery.	<a href="#">Governance &amp; Ethics</a> <a href="#">Supply Chain</a>



How our sustainability initiatives intersect the 17 goals outlined in the 2030 agenda for sustainable development.



Creating lasting change by listening to disadvantaged communities and giving back at a micro level.

[Learn More:](#)  
[Community—Manage](#)  
[Celebrate Five Years of Enhancing Communities and Changing Lives](#)



Supporting the poorest districts and neighborhoods in select global communities with a mission of empowering residents.

[Learn More:](#)  
[Celebrate Five Years of Enhancing Communities and Changing Lives](#)



Saving lives through advanced safety technologies, encouraging safe driving practices and making workplace safety a priority.

[Learn More:](#)  
[Help Customers Breathe Easier](#)  
[Think Beyond the Vehicle](#)  
[Expand Deployment of New Technologies](#)  
[Data to Drive Safety and Sustainability](#)  
[Help Teens Hit the Road Safely](#)  
[Reinforce a Companywide Safety Culture](#)  
[Promote Employee Wellness and Balance](#)  
[Help Kids in China Ride Safe](#)



Investing in STEM education programs to help the next generation excel in school and compete in the workforce.

[Learn More:](#)  
[Introduce New STEM Partnerships](#)  
[Engage Students in Autonomous Vehicle Development](#)  
[Foster Children's Creativity Year-Round](#)  
[Support STEM Students in Our Hometown Community](#)  
[Celebrate Five Years of Enhancing Communities and Changing Lives](#)  
[Promote Education for Youth Across China](#)



Supporting women worldwide by standing up for equal pay and creating opportunities for advancement.

[Learn More:](#)  
[Empower Women to Lead](#)  
[Encourage STEM Reentry](#)  
[Share Wisdom From Powerful Women](#)



Managing and reducing our water usage and risks in our operations and throughout our supply chain.

[Learn More:](#)  
[Ride the Wave of Water Conservation](#)



Committing to 100 percent renewable energy to meet the electricity needs of our operations by 2050.

[Learn More:](#)  
[Make Progress Toward Our Renewable Energy Commitment](#)  
[Collaborate to Advance Alternative Energy](#)



Building a workplace where employees feel valued, where their rights are respected and where they can do meaningful work.

[Learn More:](#)  
[Promote Employee Wellness and Balance](#)  
[Help Professionals Relaunch Their Careers](#)  
[Support Employees at Every Career Stage](#)  
[How GM Shares Their Values](#)  
[Attract and Keep Top Talent](#)  
[Help Eradicate Forced Labor](#)  
[Help Employees Speak Up](#)



Transforming transportation through innovations in advanced vehicle and fuel technologies, shared mobility services and autonomous technology.

[Learn More:](#)  
[Products—Manage](#)  
[Personal Mobility—Manage](#)  
[Deliver America's Favorite Electric Vehicle: The Chevrolet Bolt EV](#)  
[Increase Adoption of EVs](#)  
[Maximize EV Battery Life](#)  
[Leverage Electrification in Traditional Vehicles](#)  
[Grow EVs in China](#)  
[Promote Efficient Fundamentals](#)

[Provide Connectivity for Fleet Customers](#)  
[Refine Car Sharing With Maven](#)  
[Utilize Maven to Enhance EV Awareness](#)  
[Write the Rules on AV Policy](#)  
[Scale Production of Autonomous Vehicles](#)  
[The Road to Self-Driving Cars](#)  
[Align and Optimize Cybersecurity Management](#)



Leveling the playing field by embracing fair practices for hiring, promotion and compensation.

**Learn More:**  
[Enlist ERGs to Create Business Value](#)

[Empower Women to Lead](#)  
[Our Commitment to a Respectful Workplace](#)  
[Encourage STEM Reentry](#)



Developing mobility solutions that help cities address challenges such as air quality and congestion.

**Learn More:**  
[Personal Mobility—Manage](#)  
[Community—Manage](#)

[Provide Connectivity for Fleet Customers](#)  
[Refine Car Sharing With Maven](#)  
[Utilize Maven to Enhance EV Awareness](#)  
[Solutions for Cities](#)  
[Engaging Cities on Autonomous Public Policy](#)  
[Write the Rules on AV Policy](#)  
[Scale Production of Autonomous Vehicles](#)  
[Use Surplus Materials to Build a New Kind of Neighborhood](#)



Designing and manufacturing products through the responsible use of raw materials and natural resources.

**Learn More:**  
[Operations—Manage](#)

[Make Progress Toward Our Renewable Energy Commitment](#)  
[Set Benchmarks for Global Vehicle Manufacturing](#)  
[Think Circular Across Our Value Chain](#)  
[Drive Energy Efficiency Throughout Our Facilities](#)  
[Collaborate for Better Buildings](#)  
[Ride the Wave of Water Conservation](#)



Increasing the fuel economy of our vehicles and using less-carbon-intensive manufacturing processes to mitigate the effects of climate change.

**Learn More:**

[Products—Manage](#)  
[Increase Adoption of EVs](#)  
[Maximize EV Battery Life](#)  
[Leverage Electrification in Traditional Vehicles](#)  
[Promote Efficient Fundamentals](#)  
[Collaborate to Advance Alternative Energy](#)  
[Make Progress Toward Our Renewable Energy Commitment](#)  
[Set Benchmarks for Global Vehicle Manufacturing](#)  
[Support Carbon Pricing Efforts](#)  
[Drive Energy Efficiency Throughout Our Facilities](#)



Practicing responsible water conservation techniques and supporting biodiversity in and around our facilities.

**Learn More:**  
[Think Circular Across Our Value Chain](#)

[Ride the Wave of Water Conservation](#)  
[Reduce Ocean Plastic Pollution](#)



Promoting and protecting biodiversity through certified wildlife habitats at our facilities and throughout our supply chains.

**Learn More:**  
[Commit to Sustainable Natural Rubber for Tires](#)

[Eyes on Sustainable Leather](#)  
[Offset Emissions While Protecting Biodiversity](#)  
[Bring Sustainability to Employees' Backyards](#)



Conducting business in an accountable manner through rigorous ethics and compliance throughout our value chain.

**Learn More:**  
[Governance & Ethics—Manage](#)  
[Set Industry Standards for Suppliers](#)

[Manage Raw Material Supply Chain Risks](#)  
[Promote an Ethical Culture](#)  
[Required Corporate Training](#)



Partnering and collaborating with third parties to solve our industry's greatest challenges.

**Learn More:**  
[Stakeholder Engagement](#)

# SASB Index

Our 2017 report marks the first time that GM has reported to the Sustainability Accounting Standards Board framework. Currently, we do not track all metrics included in the Transportation Standards but look forward to including more data in the future.

	Metric	Category	Unit of Measure	Code	Response
<b>Accounting Metrics</b>	Number of vehicles produced	Quantitative	Number	TR0101-A	8,898,697 vehicles
	Number of vehicles sold	Quantitative	Number	TR0101-B	9,600,000
Topic	Metric	Category	Unit of Measure	Code	Response
<b>Materials Efficiency &amp; Recycling</b>	Narrative description of Materials Efficiency & Recycling	Qualitative	The registrant's strategic approach to managing performance on material sustainability issues; • The registrant's competitive positioning; • The degree of control the registrant has; • Any measures the registrant has undertaken or plans to undertake to improve performance; and • Data for the registrant's last three completed fiscal years (when available).	N/A	<a href="#">Operations</a>
	Amount of total waste from manufacturing, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR0101-01	GRI 306-2 Our 100 landfill-free manufacturing sites on average reuse, recycle or compost approximately 91 percent of their waste from daily operations and convert 9 percent to energy.
	Weight of end-of-life material recovered, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	TR0101-02	On average, our vehicles are approximately 85 percent recyclable and 95 percent recoverable by weight.
	Average recyclability of vehicles sold, by weight	Quantitative	Percentage (%) by sales-weighted weight (metric tons)	TR0101-03	On average, our vehicles are approximately 85 percent recyclable and 95 percent recoverable by weight

# SASB Index

Product Safety	Narrative description of Product Safety	Qualitative	The registrant's strategic approach to managing performance on material sustainability issues; • The registrant's competitive positioning; • The degree of control the registrant has; • Any measures the registrant has undertaken or plans to undertake to improve performance; and • Data for the registrant's last three completed fiscal years (when available).	N/A	<a href="#">Safety</a> ; <a href="#">Personal Mobility</a>
	Percentage of models rated by NCAP programs with overall 5-star safety rating, by region	Quantitative	Percentage (%) of rated vehicles	TR0101-04	<a href="#">Safety-Measure</a>
	Number of safety-related defect complaints, percentage investigated	Quantitative	Number, Percentage (%)	TR0101-05	Through our Speak Up for Safety program, 20,087 submissions have been made since 2014. 100% of submissions are investigated.
	Number of vehicles recalled	Quantitative	Number	TR0101-06	<a href="#">Safety-Measure</a>
Labor Relations	Narrative description of Labor Relations	Qualitative	The registrant's strategic approach to managing performance on material sustainability issues; • The registrant's competitive positioning; • The degree of control the registrant has; • Any measures the registrant has undertaken or plans to undertake to improve performance; and • Data for the registrant's last three completed fiscal years (when available).	N/A	<a href="#">Talent</a>
	Percentage of active workforce covered under collective bargaining agreements, broken down by U.S. and foreign employees	Quantitative	Percentage (%)	TR0101-07	69 percent of our global workforce is represented by a total of 29 unions.
	Number and duration of strikes and lockouts	Quantitative	Number, Days	TR0101-08	During 2017, General Motors recorded one strike in Canada; approximately 60 hours of work stoppages related to wage-negotiations in South Korea; and approximately 119 cumulative hours of work stoppages at four plants in South America.



# SASB Index

Fuel Economy & Use-Phase Emissions	Narrative description of Fuel Economy & Use-Phase Emissions	Qualitative	The registrant's strategic approach to managing performance on material sustainability issues; <ul style="list-style-type: none"> <li>• The registrant's competitive positioning;</li> <li>• The degree of control the registrant has;</li> <li>• Any measures the registrant has undertaken or plans to undertake to improve performance; and</li> <li>• Data for the registrant's last three completed fiscal years (when available).</li> </ul>	N/A	<a href="#">Products</a>
	Sales-weighted average passenger fleet fuel economy, consumption or emissions, by region	Quantitative	Mpg, L/km, gCO2/km, km/L	TR0101-09	Note: Data is for model year 2016. We will provide 2017 data when available from EPA. <a href="https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-ghg-emission-standards-light-duty-vehicles#2016MY">https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-ghg-emission-standards-light-duty-vehicles#2016MY</a>
	Number of (1) zero-emission vehicles (ZEV) sold (2) hybrid vehicles sold and (3) plug-in hybrid vehicles sold	Quantitative	Vehicle units sold	TR0101-10	1) 29,348 2) 34,596 3) 34,276
Materials Sourcing	Narrative description of Materials Sourcing	Qualitative	The registrant's strategic approach to managing performance on material sustainability issues; <ul style="list-style-type: none"> <li>• The registrant's competitive positioning;</li> <li>• The degree of control the registrant has;</li> <li>• Any measures the registrant has undertaken or plans to undertake to improve performance; and</li> <li>• Data for the registrant's last three completed fiscal years (when available).</li> </ul>	N/A	<a href="#">Supply Chain</a>
	Percentage of materials costs for items containing critical materials	Quantitative	Percentage (%)	TR0101-11	<a href="#">Supply Chain—Measure</a>
	Percentage of tungsten, tin, tantalum and gold smelters and refiners within the supply chain that are verified conflict-free	Quantitative	Percentage (%)	TR0101-12	<a href="http://www.gm.com/investors/sec-filings.html">http://www.gm.com/investors/sec-filings.html</a>
	Discussion of the management of risks associated with the use of critical materials and conflict minerals	Discussion and Analysis	N/A	TR0101-13	<a href="#">Supply Chain—Manage Cobalt Supply Chain Risks</a>

# Task Force on Climate-related Financial Disclosures

The Financial Stability Board Task Force on Climate-related Financial Disclosure (TCFD) has developed a voluntary, consistent climate-related financial risk disclosure for use by companies in providing information to investors, lenders, insurers and other stakeholders. The TCFD framework rests on four main tenets.

Disclosure Focus Area	Recommended Disclosure	Source	Comment / Disclosure examples
<b>GOVERNANCE</b>			
Disclose the organization's governance around climate-related risks and opportunities		Sustainability Report & CDP	GM's 2017 Sustainability Report and its 2017 CDP Climate Change survey response includes information related to GM's governance around climate-related risks and opportunities.
	a) Describe the board's oversight of climate-related risks and opportunities"	2017 Sustainability Report	<a href="#">Governance &amp; Ethics</a>
		2017 CDP Climate Change survey response, Question CC1.1a	(i) The Governance and Corporate Responsibility Committee (GCRC) of the GM Board of Directors (ii) is comprised of three independent directors. The GCRC provides oversight and guidance to management on policies to support the Company's progress in growing the business globally within the framework of its core values, including Climate Change. The GCRC discusses, and brings to the attention of the Board and management as appropriate, current and emerging global political, social and policy issues that may affect the business operations, profitability or public image or reputation of the Company. The GCRC oversees global public policy matters as well as specific functions of the Company, as appropriate. Company functions reviewed by the GCRC include Legal, Global Public Policy, sustainability, corporate social responsibility and philanthropic activities.
	b) Describe management's role in assessing and managing climate-related risks and opportunities	2017 Sustainability Report	<a href="#">CEO Letter to Stakeholders</a> , <a href="#">Sustainability Strategy</a> , <a href="#">Products</a> , <a href="#">Governance &amp; Ethics</a>
		2017 CDP Climate Change survey response, Question CC1.2a	GM has a "Commitment and Accountability Partnership" or CAP system for performance evaluation and compensation. CAP goals are set at the beginning of the year and reviewed every six months for performance. Manufacturing executive leadership team members have the goal of meeting Energy targets in each region, and this is linked to compensation.

# Task Force on Climate-related Financial Disclosures

Disclosure Focus Area	Recommended Disclosure	Source	Comment / Disclosure examples
<b>STRATEGY</b>			
Disclose the actual and potential impacts of climate related risks and opportunities on the organization's businesses, strategy and financial planning.		Sustainability Report, CDP and 10K	GM's 2017 Sustainability Report, 2017 CDP Climate Change survey response and its fiscal year 2017 10K include information on actual and potential impacts of climate-related risks and opportunities on GM.
	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.	2017 Sustainability Report	<a href="#">CEO Letter to Stakeholders</a> , <a href="#">Sustainability Strategy</a> , <a href="#">Products</a> , <a href="#">Personal Mobility</a> , <a href="#">GRI Content Index</a>
		2017 CDP Climate Change survey response, Question CC2.1a	Regulatory risks are among the most significant risks likely to impact GM. Due to the potentially catastrophic effects of climate change, governments around the world have or are likely to enact, policies and regulations that could impact our operations and products. Because it may take three to five years to design and develop a vehicle before it is launched in the market and then remain competitive and compliant for another four to seven years, GM must have a long-term approach to regulatory risks.
		2017 CDP Climate Change survey response, Question CC2.2a	In the short term (zero to five years), GM is responding to climate change by setting aggressive energy and GHG intensity reduction targets through 2020. The internal process used is to integrate energy reduction into our business plan. Annually, we develop energy and GHG reduction targets at global, regional and facility levels and include methods in our annual business planning process which GM calls its Business Plan Deployment (BPD). These methods include behavioral—cold shutdown, energy efficiency—LED lights, HVAC controls, and low carbon solutions—for example use landfill gas to generate electricity. Each month data is collected on energy use and carbon emissions performance that is compared at each site to the target, and, if the target is not met, countermeasures are developed to meet them. An example of how this process has influenced business strategy is the development of an ongoing dedicated fund for energy savings projects of \$20 million USD and use of energy performance contracting to fund energy- and carbon-reduction methods. In 2016, energy- and carbon-reduction projects resulted in 4.3 percent carbon reduction on an absolute basis.
		FY 2017 10K	Item 1A. Risk Factors

# Task Force on Climate-related Financial Disclosures

Disclosure Focus Area	Recommended Disclosure	Source	Comment / Disclosure examples
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.	2017 Sustainability Report	<a href="#">CEO Letter to Stakeholders</a> , <a href="#">Sustainability Strategy</a> , <a href="#">Products</a> , <a href="#">Operations</a> , <a href="#">GRI Content Index</a>
		2017 CDP Climate Change survey response, Question CC2.1c	With regard to climate change, risks and opportunities vary from government regulations to supply chain disruption. These are prioritized differences based on frequency of occurrence, time to respond and impact. For example, government regulations such as new fuel economy/CO2 tailpipe emissions are occurring at a high frequency, but the time to respond is generally adequate to execute mitigation plans that minimize the impact to the Company.
		2017 CDP Climate Change survey response, Question CC2.2a	Our R&D progress is significant. We've received more than 700 patents in fuel cell technologies since 2002)—more than any other company)—and we lead all companies in terms of most U.S. clean-energy patents granted since 2002, according to Clean Energy Patent Growth Index of U.S. Patents. This effort was key to developing the Chevrolet Volt. As a result, the Chevrolet Volt is one of the most award-winning vehicles on the road today and has been the best-selling plug-in vehicle in the U.S. through 2016.
		FY 2017 10K	Item 1. Business: Research, Product and Business Development and Intellectual Property; Environmental and Regulatory Matters; Item 1A. Risk Factors
	c) Describe the potential impact of different scenarios, including a 2°C scenario, on the organization's businesses, strategy and financial planning.	2017 Sustainability Report	<a href="#">Q&amp;A section</a> , <a href="#">Supply Chain</a>
<b>RISK MANAGEMENT</b>			
Disclose how the organization identifies, assesses and manages climate-related risks.		Sustainability Report, CDP	GM's 2017 Sustainability Report and its CDP Climate Change survey response includes information related to how GM identifies, assesses and manages climate-related risks.
	a) Describe the organization's process for identifying and assessing climate-related risks.	2017 Sustainability Report	<a href="#">Sustainability Strategy</a> , <a href="#">Products</a> , <a href="#">Governance &amp; Ethics</a>
		2017 CDP Climate Change survey response, Question CC2.1b	The Chief Risk Officer of GM is Mary Barra, also Chairman and CEO. The Risk Committee of the Board is responsible for overseeing GM's management of enterprise-level risks. The Strategic Risk Management (SRM) team, led by an executive director with dedicated resources, has risk management responsibility and is supported by the Risk Advisory Council (RAC)—executives who directly report to the Executive Leadership Team (ELT).



# Task Force on Climate-related Financial Disclosures

Disclosure Focus Area	Recommended Disclosure	Source	Comment / Disclosure examples
	b) Describe the organization's processes for managing climate-related risks.	2017 Sustainability Report	<a href="#">Sustainability Strategy, Products, Governance &amp; Ethics</a>
		2017 CDP Climate Change survey response, Question 2.2a	In the short term (zero to five years), GM is responding to climate change by setting aggressive energy and GHG intensity reduction targets through 2020. The internal process used is to integrate energy reduction into our business plan. Annually, we develop energy and GHG reduction targets at global, regional and facility levels and include methods in our annual business planning process which GM calls its Business Plan Deployment (BPD). These methods include behavioral—cold shutdown, energy efficiency—LED lights, HVAC controls, and low carbon solutions—for example use landfill gas to generate electricity. Each month data is collected on energy use and carbon emissions performance that is compared at each site to the target, and, if the target is not met, countermeasures are developed to meet them.
	c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	2017 Sustainability Report	<a href="#">Governance &amp; Ethics</a>
		2017 CDP Climate Change survey response, Question CC2.1	Integrated into multidisciplinary, companywide risk management processes
<b>METRICS &amp; TARGETS</b>			
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities.		Sustainability Report, CDP & 10K	GM's 2017 Sustainability Report, 2017 CDP Climate Change survey response and its fiscal year 2017 10K include information the metrics and targets used to assess and manage relevant climate-related risks and opportunities.
	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk-management process.	2017 Sustainability Report	<a href="#">Products, Supply Chain, Operations, GRI Content Index</a>
		2017 CDP Climate Change survey response	Section CC3. Targets and Initiatives
		FY 2017 10K	Item 1. Business: Environmental and Regulatory Matters
	b) Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	2017 Sustainability Report	<a href="#">GRI Content Index</a>
		2017 CDP Climate Change survey response	Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	2017 Sustainability Report	<a href="#">Products, Supply Chain, Operations, GRI Content Index</a>
		2017 CDP Climate Change survey response	Section CC3. Targets and Initiatives
		FY 2017 10K	Item 1. Business: Environmental and Regulatory Matters

## Statement of Verification

### Introduction

Stantec Consulting Ltd. (Stantec) was contracted by General Motors Company (GM) to conduct an independent third-party verification of a selection of greenhouse gas (GHG) Assertions and Environmental Performance Metrics for their Global Facilities.

In this work, GM was responsible for the collection of activity data used in the calculations, data management, and completion of the calculations.

Stantec was responsible for planning and executing the verification to deliver an opinion to a limited level of assurance as to whether the GHG assertions and environmental performance metrics are presented fairly and in accordance with the verification criteria. Stantec is accredited with the American National Standards Institute (ANSI), a member of the International Accreditation Forum (IAF), in accordance with ISO 14065 (Accreditation ID #0805 issued to Stantec Consulting Ltd. for greenhouse gas (GHG) verification and validation).

### Intended User

The results of the verification will be used by GM for internal and external sustainability reporting, and for reporting to CDP. The users of this statement are GM, shareholders and the public.

### Verification Objective

The objective of the verification was to assess whether the GHG Assertions and Environmental Performance Metrics (as presented in Table 1) for GM's 2017 operations are accurately prepared in accordance with appropriate criteria.

### Verification Boundaries

The boundaries of the verification include GM owned and operated facilities within General Motors North America (GMNA), General Motors South America (GMSA) and General Motors International Operations (GMIO). A subset of these facilities have been excluded from the GHG Assertion and Environmental Performance Metrics due to unavailability of data, and a list of these excluded facilities has been provided to Stantec.

### Reporting Period

The verification was conducted for the period of January 1, 2017 to December 31, 2017.

### GHG Assertions and Environmental Performance Metrics

The GHG Assertions and Environmental Performance Metrics are provided in Table 1.

**Table 1. General Motors Global Facilities – 2017 GHG Assertions and Environmental Performance Metrics**

Parameter	Assertion	Metric
Scope 1 & 2 GHG Emissions	6,231,850	tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e)
Scope 1 Direct	1,659,116	tCO <sub>2</sub> e
Scope 2 Indirect	4,572,733	tCO <sub>2</sub> e
Total Energy Consumption	17,425,068	MWh
Total Water Withdrawal	37,493,216	m <sup>3</sup>
Total Waste	2,441,163	US tons
Year over year performance Scope 1 & 2 GHG emissions	11.7% decrease between 2016 and 2017	%
Year over year performance Total Energy Use	4.3% decrease between 2016 and 2017	%
Year over year performance Total Water Use	0.4% decrease between 2016 and 2017	%
GRI 302-1 Total Energy Use	17,425,068	MWh
GRI 303-1 Total Water Use	37,493,216	m <sup>3</sup>
GRI 305-1 Total Scope 1 GHG Emissions (Location-Based)	1,659,116	tCO <sub>2</sub> e
GRI 305-1 Total Scope 2 GHG Emissions	4,572,733	tCO <sub>2</sub> e
GRI 306-2 Total Waste	2,441,163	US tons

### Verification Criteria

Stantec has conducted sufficient and appropriate procedures to express a **limited level of assurance** opinion as to whether the GHG Assertions and Environmental Performance Metrics for 2017 as quantified by GM satisfy the requirements of the following criteria:

- ISO 14064 Greenhouses Gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals, 2006;
- World Resources Institute (WRI)/World Business Council for Sustainable Development (WBCSD), *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (Revised Edition), March 2004;



- WRI/WBCSD, Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard;
- WRI/WBCSD, GHG Protocol Scope 2 Guidance: An Amendment to the GHG Corporate Standard;
- CDP Guidance for the 2017 reporting year (CDP Guidance); and
- GRI Sustainability Reporting Guidelines (2011).

### Verification Standards

The verification was conducted in accordance with ISO14064:3, the AA1000 AccountAbility Principles Standard (2008) and Stantec's Standard Operating Procedures developed for accreditation to ISO 14065.

### Verification Opinion

Based on the processes and procedures completed, there is no evidence that GM's stated GHG Assertions and Environmental Performance Metrics for the 2017 calendar year are not, in all material respects, fairly stated in accordance with the criteria noted herein.

### Verifier's Independence, Impartiality, and Competence

Stantec provides this conclusion as an independent verifier. Prior to entering into an assurance agreement Stantec assesses for any real, potential, or perceived conflict. Stantec continues to monitor for compromised impartiality throughout the engagement.

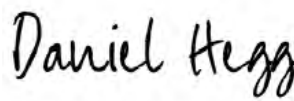
Stantec provides this statement to GM in accordance with our terms of agreement. We consent to its public release. Because of the inherent limitations in any verification, Stantec accepts no responsibility by use of a third party. Stantec has undertaken all assignments in its role as an environmental engineering consulting firm using professional effort consistent with ISO 14064:3. Stantec has assessed the 2017 GHG Assertion and Environmental Performance Metrics for GM Global Facilities using reasonably ascertainable information. The assessment represents the conditions in the subject area at the time of the assessment. Stantec did not conduct direct GHG emissions monitoring or other environmental sampling and analysis in conjunction with this verification statement.

### STANTEC CONSULTING LTD.




---

Gizem Gunal-Akgol, P.Eng  
Lead Verifier  
Environmental Services  
Tel: (519) 569-8126




---

Daniel Hegg, M.Sc., CEM  
Independent Peer Reviewer  
Environmental Services  
Tel: (250) 389-2538

Issued June 8, 2018 in Waterloo, Ontario, Canada



# Forward-Looking Statements

**Cautionary Note on Forward-Looking Statements.** This document may include forward-looking statements. These statements are based on current expectations about possible future events and thus are inherently uncertain. Our actual results may differ materially from forward-looking statements due to a variety of factors, including: (1) our ability to deliver new products, services and experiences that attract new, and are desired by existing, customers and to effectively compete in autonomous, ride-sharing and transportation as a service; (2) sales of crossovers, SUVs and full-size pick-up trucks; (3) our ability to reduce the costs associated with the manufacture and sale of electric vehicles; (4) the volatility of global sales and operations; (5) our significant business in China which subjects us to unique operational, competitive and regulatory risks; (6) our joint ventures, which we cannot operate solely for our benefit and over which we may have limited control; (7) changes in government leadership and laws (including tax laws), economic tensions between governments and changes in international trade policies, new barriers to entry and changes to or withdrawals from free trade agreements, changes in foreign exchange rates, economic downturns in foreign countries, differing local product preferences and product requirements, compliance with U.S. and foreign countries' export controls and economic sanctions, differing labor regulations and difficulties in obtaining financing in foreign countries; (8) our dependence on our manufacturing facilities; (9) the ability of suppliers to deliver parts, systems and components without disruption and on schedule; (10) prices of raw materials; (11) our highly competitive industry; (12) the possibility that competitors may independently develop products and services similar to ours despite our intellectual property rights; (13) security breaches and other disruptions to our vehicles, information technology networks and systems; (14) compliance with laws and regulations applicable to our industry, including those regarding fuel economy and emissions; (15) costs and risks associated with litigation and government investigations; (16) compliance with the terms of the Deferred Prosecution Agreement; (17) the cost and effect on our reputation of product safety recalls and alleged defects in products and services; (18) our ability to successfully and cost-efficiently restructure operations in various countries, including Korea, with minimal disruption to our supply chain and operations, globally; (19) our ability to realize production efficiencies and to achieve reductions in costs; (20) our ability to develop captive financing capability through GM Financial; and (21) significant increases in pension expense or projected pension contributions. A further list and description of these risks, uncertainties and other factors can be found in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, and our subsequent filings with the Securities and Exchange Commission. GM cautions readers not to place undue reliance on forward-looking statements. GM undertakes no obligation to update publicly or otherwise revise any forward-looking statements.