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DECEMBER 9, 2019



Ford and McDonald's are using coffee bits to make automotive parts.

Ford Thinking Outside Box, **Creates Parts From Food**

Ford's latest project isn't so off during the roasting process. much food for thought as it is food for auomotive (Mc)parts.

Ford Motor Company and Mc-Donald's USA will soon be giving vehicles a caffeine boost by using part of a familiar staple in the morning routine, coffee beans, in vehicle parts such as headlamp

Every year, millions of pounds of coffee chaff - the dried skin of the bean - naturally comes

Together, Ford and McDonald's can provide an innovative new home to a significant portion of that material, Ford spokesman John Cangany said. The companies found that chaff can be converted into a durable material to reinforce certain vehicle parts. By heating the chaff to high temperatures under low

CONTINUED ON PAGE 4

UAW Starts Voting on FCA Pact

by TOM KRISHER AP Auto Writer

DETROIT (AP) - The United Auto Workers and Fiat Chrysler reached a tentative agreement Nov. 30 on a new four-year contract, which includes a total of \$9 billion in investments but still needs final approval from work-

Both sides declined to offer details on the deal, but it includes a \$9.000 bonus for workers when 31 after a bitter 40-day strike that

the agreement is ratified, a promise not to close any factories where vehicles are assembled for the next four years, and a commitment to keep making vehicles at a plant in Belvidere, Ill., according to a person briefed on the matter. The person spoke on condition of anonymity because the talks are confidential.

Fiat Chrysler is the last company to settle on a new contract with the union. GM settled Oct.

paralyzed the company's U.S. factories, but Ford reached a deal quickly and settled in mid-November. Talks have focused on Fiat

Chrysler for almost two weeks, and both sides negotiated into the early morning hours earlier last week before taking a break for the Thanksgiving holiday.

The Illinois factory west of Chicago now makes the Jeep

CONTINUED ON PAGE 4

GM Building New Lordstown Battery Plant

GM's efforts to improve and introduce EV technology to the public continues.

So said GM spokesman Tom Henderson, noting that General Motors and LG Chem have agreed on plans to mass-produce battery cells for future batteryelectric vehicles.

Together, the companies will invest up to \$2.3 billion through a new, equally owned joint venture company, said Henderson.

The joint venture will establish a battery cell assembly plant on a greenfield manufacturing site in the Lordstown area of Northeast Ohio that will create more than 1,100 new jobs, Henderson said.

The state-of-the art plant will

CONTINUED ON PAGE 5



GM and LG Chem have joined forces to produce EV batteries in Ohio.

Pacifica, Ram 1500 Are Consumer Friendly

The verdict is in - the 2020 testing all major models avail-Chrysler Pacifica and the 20202 Ram 1500 are a great buy.

At least that is what Consumer Guide says.

The Chrysler Pacifica and Ram 1500 are celebrating Consumer Guide Automotive Best Buy Awards in the Minivan and Large Pickup categories, extending impressive win streaks in their respective segments, said FCA spokesman Darren Jacobs. Consumer Guide editors select the winners after analyzing, comparing, evaluating and extensively able in the United States.

"As the winner of the Best Buy crown for the fourth year in a row, the Pacifica offers classleading horsepower and fuel economy, excellent road manners and ride quality, and an unmatched array of family-friendly features ... all wrapped up in a stylish package," said Tom Appel, publisher of Consumer Guide Automotive. "The 2020 Ram 1500 offers an unbeatable ride/handling combination along with a high level of refinement, premium cabin appointments and unique features.'

Chrysler Pacifica is the minivan category winner for the fourth year in a row, claiming the Consumer Guide Automotive Best Buy award in the Minivan segment each year since its debut, Jacobs said.

New for 2020, the Chrysler Pacifica Red S Edition brings a new look and a huge burst of attitude and color to Pacifica's already class-leading functional interior,

CONTINUED ON PAGE 4



2020 Ram 1500

MCC STEAM Program Shows Area Students Possible Automotive Careers

by Jim Stickford

It was full STEAM ahead last Community College student tech- clay modeling department. So nology and manufacturing review.

Now known as Auto STEAM (Science Technology Engineering Arts Mathematics) Day, the event originally got its start 14 years ago as MCC's Robotics and Technology Day, said Tim Pawlowski, dean of MCC's Applied Technology - Automotive and Technical Education.

'We changed the name and for the last three years we have brought in about 3,000 high school and middle school students from schools across metro Detroit," Pawlowski said. "For two days, we hold events at our Warren campus to demonstrate what kinds of STEAM careers are out there for students interested in jobs in the auto industry.'

This year MCC was able to get seven different manufacturing and tech companies - Ford, FCA, Kuka, Siemens, AAM, Magna and Magna - to set up demonstrations at MCC's Sport Expo Center. Pawlowski said that MCC has a

week at the annual Macomb working relationship with GM's hicle designs.

students were able to see a video that showed how GM creates fullsize clay models of proposed ve-

The FCA demonstration showed

how designers create the first pa- a computer renderings can be per vehicle designs and then trans- transformed into 3D Virtual Realfer the design from paper to a ity (VR) computer designs using computer.

The Ford display showed how

CONTINUED ON PAGE 3



While attending a recent MCC STEAM event, students had the opportunity to see vehicles go from the initial design to actual product.

General Motors Employee Donates a Kidney to Stranger

by Jim Stickford

For Briana Mohan, donating a kidney to a stranger was not a difficult decision to make.

Mohan works for GM and is Marketing lead for the Forward Marine Team developing an EV pontoon boat at the Milford Proving Ground.

She said she has dealt with some health issues since her childhood. So when a distant Facebook friend put out the word about the friend's father needing a kidney transplant, Mohan paid attention.

While she did not end up donating a kidney to the Facebook friend's father, she did learn about how she could donate a kidney to save someone's life.

what is called a non-directed kidney donation," Mohan said.

"What that means is that a person like me can approach any hospital that does kidney transplants and volunteer to donate a kidney.'

A non-directed donation is different from a directed donation, which might be a parent donating a kidney to a child or husband a husband donating to his

"I learned that there are only between 150 and 250 non-directed kidney donations on any given year," Mohan said. "I believe the reason for that is a lack of information out among the public.

"Every year, about 100,000 people will need kidney donations. I also found out that basically any kidney donated by a healthy person will be accepted for a non-directed donation.'

These types of donations are different from donations that come from organ donors, which are made after someone has died. Mohan said.

Because there is a timetable in-

volved harvesting a kidney from the recently deceased, organ donors can't cover the total demand for kidney donations.

The overall donation process took about four months, Mohan said. She started the process in June of this year, and the kidney donation was completed on Oct.

"That's actually pretty fast for this kind of thing," Mohan said. "I was told when I started that the process usually takes about six months. I have met the person who got my kidney. He is a 17year-old boy from the Cleveland area. This was his second donation. His first happened when he was three. The kidney came from his mother.'

It's not unusual for second do-"I started doing research on nations like this, Mohan said. As children grow, their immune systems change and organ rejection becomes a problem. The boy will have to be on anti-rejection drugs for the rest of his life.

In order to be accepted as a donor, Mohan had to undergo numerous medical tests and examinations.

"I had blood tests, CAT scans, X-rays, and, of course, a lot of urine tests," Mohan said. "I had no problems with those. The only test I was afraid of was the psych test. I reverted to being an engineer and even looked up the technical papers written by the woman psychiatrist who administered the psych test. That was the only test I was afraid that I could fail."

A lot of people wondered why she needed to take a psych test and asked her about it, but the reason for the psych test is simple, Mohan said.

It's to make sure the donation is voluntary. In many cases, relatives will put pressure on a member of a family to donate a kid-



Mohan got to meet the 17-year-old Cleveland youth who got her kidney.

"Family will say things like, 'I know you and dad haven't talked in years, but if you donate this kidney, things will be all right," Mohan said. "This kind of emotional pressure is unacceptable."

When Mohan announced to her friends and family her plan to donate a kidney, she got a lot of questions from people who wanted to know more about the process.

"One thing I heard a lot was people telling me the idea of donating a kidney sounded dangerous," Mohan said. "I can understand that. It's a surgical procedure after all. But I learned that donating a kidney is statistically no more dangerous than giving birth."

That fact proved useful when it came time to actually donate the kidney.

Mohan said that her sister Tara gave birth to their father's first grandchild about the same time she donated her kidney.

"My dad chilled with my sister giving birth, but said he was afraid for me," Mohan said. "I said that was normal, if he was going to be afraid for me, he'd have to be afraid for Tara because we were facing the same odds."

Mohan's research also revealed that she could live a perfectly normal life with just one kidney.

She doesn't have to eat any special kind of diet and the odds of her having to go into dialysis because of some kidney problem she could develop later in her life are so small as to be inconsequential.

"It's really important that people understand this process," Mohan said. "There's really no national kidney donation list. Hospitals can't ask people to donate, and if someone needs a kidney, if can be difficult to ask friends and family members to donate.

"I just want people to know that they can help save someone's life and the process is not something to be afraid of."

Diesel-Powered Trucks Offer Fuel Savings

New diesel options now available for consumers in America's most popular selling vehicles pickup trucks - are delivering more benefits for their owners to include fuel savings and performance gains that turn into energy savings and clean air benefits across the economy, said Allen Schaeffer, executive director of the Diesel Technology Fo-

According to new research from IHS Markit, consumers choosing a diesel engine option in full-size half-ton pickup trucks can achieve on average 33 percent more miles per gallon (24 mpg diesel vs. 18.1 gasoline, combined fuel economy) saving about 200 gallons of gasoline every year.

Beyond the fuel savings, the diesel options have greater vehicle driving range before refueling at 550 miles per tank for a diesel compared to 420 miles for gaso-

Additional performance gains for diesel come in the form of higher torque, 450 lb.-ft for diesel compared to 394 lb.-ft for gasoline.

If all full-size pickup trucks in the United States were to be powered by a diesel engine, the research found that we would realize a savings of approximately 500 million gallons of fuel for one model year; an amount equivalent to 15 percent of the U.S. car fleet switching entirely to EVs, Schaeffer said.

"New diesel engine options now available in full size/half-ton pickup trucks, including those from Chevrolet, GMC, and Ram Trucks, now bring important new fuel savings opportunities to America's most popular selling vehicles, " said Schaeffer.



HOLIDAY

Sales Event—







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*GM Employee plus tax title plate and doc fee. Lease loyalty in household \$1690 total due at signing with A1 credit.

2020 GMC YUKON SLE 4WD



*GM Employee plus tax title plate and doc fee. Lease loyalty in household \$2979 total due at signing with A1 credit.

2020 GMC TERRAIN SLE



*Plus tax title plate and doc fee. Competitive lease in household \$1506 total due at signing with A1 credit.

2020 GMC CANYON DENALI AWD



*GM Employee plus tax title plate and doc fee. Lease loyalty in household \$1729 total due at signing with A1 credit







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DECEMBER 9, 2019 DETROIT AUTOMOTIVE MANUFACTURING AND TECHNOLOGY INDUSTRIES

It Was Full STEAM Ahead at MCC Auto Technology Event

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the latest 3D computer rendering equipment.

The idea. said Pawlowski, is to show the automotive design process that moves a design from paper to full-size three-dimensional models that can be viewed in real space.

On the second day of the event, a special evening gathering is held where people from MCC and the sponsor organizations answer questions about how students can create an education path toward STEAM careers in the auto industry.

evening event," Pawlowski said. "They're able to learn about what is out there for students.'

This year, AAM of Detroit set up a demonstration of how different vehicles use different drives.

Greg Woodside, engineering manager at AAM, said the demonstration was created using remote control models. One was an All-Wheel Driver (AWD), one was a Rear-Wheel Drive (RWD) and one was Front-Wheel Drive

"During the demonstration, it's not so much that students ask us questions," Woodside "Rather, we ask them questions like which drive system will accelerate faster and which one can go up a slope faster. We then show which drive systems perform best under different circumstances and explain why.'

els, AAM brought an actual vehicle - a Jaguar that uses the company's I-Pace EV powertrain.

When we get to the question part of the program, we do get a lot of questions about electric vehicles." Woodside said. "Being able to show them an actual EV powertrain in a car is something they really enjoy."

Bringing full-sized vehicles to the event is important, Pawlowski said. It makes STEAM Day a more interactive experience because students have the chance to see what was once theoretical is now a reality.

We were very happy that FCA "The parents really like the and Ford brought vehicles that were not only on display but were also able to be touched and explored by our students,' Pawlowski said. "It makes the whole day much more interac-

"The kids get to see how designs are made, but they also get to explore the vehicles by going inside them and this lets them see how design works in the real world. It's very exciting.'

Getting schools to attend the event isn't difficult, Pawlowski

The event is designed to be educational and not put pressure on students to make a life-altering decison right on the spot, Pawlowski said.

That's something schools, parents and students really appreciate, Pawlowski said.

"This isn't a job fair," Pawlows-In addition to having RC mod- ki said. "Students can feel real



Woodside shows a scale model to demonstrate torque in front a Jaguar that uses AAM's new EV power train.

pressure at job fairs. But the idea is to offer students ideas on where they can go with their education. They don't have to make a decision 'right away' and they are able to see what's out there in a more low-pressure atmosphere.'

Pawlowski said that MCC has a strong working relationship with it."

local school districts as well as technology and manufacturing companies that operate in Michi-

Planning for the 2020 STEAM Day began right after the conclusion of the 2019 event.

"This takes a lot of work," Pawlowski said. "But it's worth

Woodside agreed, saying that the next generation of engineers and designers are today's students and getting them interested in the business matters.

"Our future depends on students, so anything we can do to let them know just what kinds of careers await them is to the good," Woodside said.

Defense Contractor Cintel Comes to Macomb County

by Jim Stickford

Detroit's defense corridor just got a little more crowded with the addition of a new player coming to Michigan.

Cintel Inc., a Huntsville, Ala., defense company is opening up offices in metro Detroit to work with U.S. Army Tank Automotive Armaments Command (TACOM) in the development of the latest technologies to go into ground vehicles for the U.S. mili-

Paul Curtis, a consultant on military development matters will serve as Detroit operations

In addition to his work for Cintel. Curtis has previously acted as an advisor to the Michigan Defense Corridor Center for Collaboration and Synergy. The organization's purpose is to promote collaboration between defense businesses in Southeast Michi-

It was started by Ron Lamparter, founder of RAVE Computer in Sterling Heights.

The company provides commercial off-the-shelf and customengineered solutions to meet the specific needs of its customers, which includes the United States military.

"This is important to Detroit because it's an out-of-state military company coming here to set up shop and develop new technology here in Michigan," said Curtis.

"The company isn't going to do the work in Alabama and then just send it up to a small office in Detroit. All the work they do will be done here."

Curtis said Cintel was founded in 2013 and the company works in data science and analytics,

software development, tactical systems solutions, hardware and software integration and cyber security.

This is important because the U.S. military is seeking to develop a new generation of ground vehicles, which are currently being developed at TACOM's Ground Vehicles Systems Center (GVSC) in Warren.

The military is concentrating on developing technology in four specific categories, Curtis said. This tech will be integrated in the next generation of ground ve-

The four core areas of development are data science and analytics, modeling simulation and software development, tactical systems and cyber security. These technologies will make up a major part of military vehicles in the future, Curtis said.

"Leveraging our capabilities in modeling and simulation, software development, machine learning and AI, cybersecurity, power systems and tactical integration, we aim to be a force multiplier for TACOM, the U.S. Army GVSC and the entire community of Warren," said Dale Jobes, president and CEO of Cintel.

Curtis said that another advantage to developing this technology here in Michigan is that the state is the heart of the domestic car industry.

Today's military technology can become tomorrow's automotive technology.

"We will also have the opportunity to expand our presence into the auto industry," Curtis said.

The company's offices will be located on Sterling Ponds Court in Sterling Heights, Curtis said. It will be Cintel's first office outside of Alabama.





2020 Chrysler Pacifica

Pacifica, Ram 1500 Are Consumer Friendly

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Jacobs said. The exclusive Red S interior features Rodèo Red premium Nappa leather two-tone seats accented by Light Diesel Grey stitching and piping and an "S" logo on the seatbacks. Silver Metal Brush hydro bezels embellish the instrument panel and door

The Pacifica Red S Edition rides on 20-inch wheels (18-inch on Pacifica Hybrid) with a Black Noise finish.

The package is rounded out by standard Advanced SafetyTec, featuring more than 100 safety and security features as well as 20-speaker Harman Kardon premium audio and KeySense, Jacobs said.

The Ram 1500 was designed to benchmark for durability.

technology, efficiency and convenience with features never before offered in a pickup, Jacobs said. The truck is celebrating its 12th straight win in the Large Pickup category, dating back to

The Ram 1500 features up to 12,750 pounds of towing capability and 2,300 pounds of payload. The eTorque mild hybrid system delivers improved fuel efficiency in both V6 (standard) and V8 configurations.

For model year 2020 the Ram 1500 has become America's most powerful half-ton diesel pickup truck with 480 lb.-ft. of torque power and is the most capable light-duty diesel, with towing capability up to 12,560 pounds, Jacobs said.

The new third-generation 3.0liter V6 EcoDiesel engine propels the 2020 Ram 1500 to an industry-leading range, exceeding 1,000 miles on a single tank of fu-

Consumer Guide Automotive editors analyze, compare and evaluate numerous different types of vehicles by extensively testing all major models available in the United States, Appel

According to Consumer Guide Automotive, a vehicle does not become a Best Buy based solely on objective ratings; Best Buys also distinguish themselves as good values compared to other vehicles in their class.

For more information on the 2020 Consumer Guide Automotive Best Buy Award winners, Appel said that readers should visit the magazine's Web site consumerguide.com.

UAW Rank and File Voting On FCA Tentative Deal

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Cherokee small SUV and employs about 3,700 union workers on two shifts.

Of the \$9 billion in total investments included in the deal, half were newly announced, and the other \$4.5 billion are investments announced earlier this year.

The \$9,000 ratification bonus isn't as much as the \$11,000 that GM workers got, but it's equal to the money paid to Ford workers. Both companies gave workers a mix of pay raises and lump-sum payments, ratification bonuses, an end to a two-tier pay scale for full-time workers and a clear path for temporary workers to go full-time.

The union also got commitments for new vehicles to be built at several GM and Ford factories.

Even if union leaders approve the deal, ratification isn't guaranteed. In 2015, workers voted down the first deal reached with Fiat Chrysler but approved a second one.

Fiat Chrysler apparently is agreeing to the "pattern" agreement reached with GM and Ford even though the company's CEO said earlier this month that all of the companies are in different labor circumstances.

Following the same deal would cost Fiat Chrysler more because the makeup of its workforce is different. FCA has more temporary workers than either General Motors or Ford, and it also has more so-called "second tier" workers hired after 2007 who now make less than longtime workers.

The deal with Ford and GM gives pay raises to workers hired

after 2007, so they reach top UAW production wages of more than \$32 per hour within four years. It also gives temporary workers a path to full-time jobs within three years.

Ford has about 18,500 workers hired after 2007 who will get big pay raises with the new contract, compared with GM's 17,000. Fiat Chrysler has over 20,000 union employees hired after 2007.

In addition, about 11 percent of Fiat Chrysler's UAW workforce is temporary, while Ford has a cap at 8 percent and GM is around 7 percent.

Fiat Chrysler in past years has enjoyed a labor-cost advantage compared with Ford and GM. FCA's labor costs, including wages and benefits, amounted to \$55 per hour going into the contract talks, while they were \$61 at Ford and \$63 at GM, according to the Center for Automotive Research, an industry think tank. That compares with an average of \$50 per hour at U.S. plants owned by foreign-based automakers.

General Motors last month filed a federal racketeering lawsuit against FCA, alleging that the company bribed UAW officials to get more favorable contract terms than GM. Fiat Chrysler has called the lawsuit "meritless."

General Motors alleges that the move, which it contends cost it billions of dollars, was aimed at forcing a merger with Fiat Chrysler that was desperately sought by FCA CEO Sergio Marchionne, who died in 2018.

Last month, Fiat Chrysler announced plans to merge with France's PSA, which will create the world's fourth-largest auto company worth an estimated \$50 billion.

Ford Makes Auto Parts From Coffee

CONTINUED FROM PAGE 1

oxygen, mixing it with plastic and other additives and turning it into pellets, the material can be formed into various shapes.

The chaff composite meets the quality specifications for parts like headlamp housings and other interior and under-hood components. The resulting components will be about 20 percent lighter and require up to 25 percent less energy during the molding process.

Heat properties of the chaff component are significantly better than the currently used material, according to Ford experts, Cangany said. This is the first time Ford has used coffee bean skins to convert into select vehicle parts.

"McDonald's commitment to and matched our own forward-Mielewski, Ford senior technical leader, Sustainability and Emerging Materials Research team. for over 20 years, and this is an sor of the coffee chaff.

example of jump-starting the closed-loop economy, where different industries work together and exchange materials that otherwise would be side or waste products.'

McDonald's is expected to direct a significant portion of its coffee chaff in North America to Ford to be incorporated into vehicle parts.

"Like McDonald's, Ford is committed to minimizing waste and we're always looking for innovative ways to further that goal," said Ian Olson, senior director of McDonald's Global Sustainability. "By finding a way to use coffee chaff as a resource, we are elevating how companies together can increase participation in the closed-loop economy.'

The collaboration with Ford and McDonald's is the latest exinnovation was impressive to us ample of the innovative approaches both companies take thinking vision and action for to product and environmental sustainability," said Debbie stewardship, Cangany said. The project also involves Varroc Lighting Systems, which supplies the headlamps, and Competitive "This has been a priority for Ford Green Technologies, the proces-





GM Tech Center Neighborhood Landmark Wrecked in Fire

by Jim Stickford

Warren firefighters were called to put out a fire at the landmark Chicago Deli in Warren at 3:12 a.m. on Nov. 27, the day before Thanksgiving.

The Warren landmark is located on Old Chicago Road near the Tech Center and has provided meals to GM employees since it first opened its doors in 1983.

Warren Fire Marshall David Evans said that neighbors and people driving by called in to report flames coming from the restaurant.

Damage to the restaurant showed that a large portion of the roof collapsed into the interior of the building.

"At this time (Dec. 2) the cause of the fire remains under investigation," Evans said. "We will not be commenting on the fire until our official report is issued at a later date."

Evans said that Warren Station Four on Chicago Road was the first station to send responders to the fire. Engine Five from Warren's Hoover fire station also sent units.

All in all, the city of Warren sent a total of eight vehicles, including fire engines, a ladder



The Chicago Deli, a restaurant frequented by GM Tech Center employees for decades, caught fire Nov. 27.

truck and two squad vehicles were sent to help put out the blaze. Evans said.

"We were at the scene for about three-and-a-half hours," Evans said. "We had the fire under control within 40 minutes of our arrival."

Mike Antoski, co-owner of Chicago Deli, along with his wife Jackie, said that the restaurant was opened up and run by his father back in 1983 and has remained family-run since that time. He said it was being run by his son Matty at the time of the blaze.

"We are just a small family place," Antoski said. "Our customers come from the neighborhood and from the Tech Center. I don't follow social media, but my wife does and she said that we have received so many condolence posts on Facebook. I must say that hearing from so many people is overwhelming."

Antoski said that once the investigation is completed and the cleanup begins, it's very likely that the entire building will have to come down due to the extensive damage caused by the Nov. 27 fire.

"We plan on reopening as soon as possible," Antoski said. "When depends on when the investigation is finished and what our insurance company says."

UAW Official Makes Guilty Plea in Court

PAGE 5

DETROIT (AP) – A retired vice president at the United Auto Workers pleaded guilty Dec. 4 to corruption charges, admitting he received a \$250,000 kickback after arranging a contract for 58,000 watches.

Joe Ashton, who led the union's General Motors department until July 2014 and also had a seat on the automaker's board.

Ten people with ties to the UAW have been charged in the corruption investigation; eight have pleaded guilty, including the widow of a union vice president.

Separately, three people who worked at Fiat Chrysler have been convicted.

Ashton, 71, of Ocean View, New Jersey, appeared in Detroit federal court. He pleaded guilty to conspiracy charges and faces roughly three years in prison at his March 3 sentencing.

Ashton declined to comment outside court. He awarded a \$3.9 million contract from the UAW-GM training center for thousands of watches that remain in storage.

LG Chem, GM Building New Battery Plant

CONTINUED FROM PAGE 1

use the most advanced manufacturing processes all under one roof to produce cells efficiently, with little waste, and will benefit from strong economies of scale throughout the value chain, Henderson said. The plant will be extremely flexible and able to adapt to ongoing advances in technology and materials, he said.

The collaboration also includes a joint development agreement that brings together two leaders in battery science to develop and produce advanced battery technologies, with the goal of reducing battery costs to industry-leading levels.

This agreement, along with the recent sale of GM's manufacturing complex in Lordstown, Ohio, to Lordstown Motors Corp. for the production of battery-electric trucks, positions Northeast Ohio and the Mahoning Valley as a major hub for technology and electric vehicle manufacturing.

"With this investment, Ohio and its highly capable workforce will play a key role in our journey toward a world with zero emissions," said GM Chairman and CEO Mary Barra. "Combining our manufacturing expertise with LG Chem's leading battery-cell technology will help accelerate our pursuit of an all-electric future.

"We look forward to collaborating with LG Chem on future cell technologies that will continue to improve the value we deliver to our customers." inflators and should be parked, BMW said. The rest can still be driven. In addition, certain Volkswagen, Honda, Toyota and Mitsubishi vehicles made from 1995

In addition to vertically integrating the manufacturing of battery cells in the U.S., LG Chem will gain access to an experienced workforce, Henderson said. It will also benefit from a dedicated production stream of future EVs from GM's next generation of battery-electric vehicles, including an all-new battery-electric truck coming in the fall of 2021.

"Our joint venture with the No. 1 American automaker will further prepare us for the anticipated growth of the North American EV market, while giving us insights into the broader EV ecosystem," said LG Chem Vice Chairman & CEO Hak-Cheol Shin. "Our long-standing history with General Motors has proven our collective expertise in this space, and we look forward to continuing this drive for zero emissions."

This investment builds on GM's \$28 million investment in its Warren battery lab an-

nounced late last year. It is also in addition to manufacturing investments in Ohio announced earlier this year totaling approximately \$700 million that will create about 450 jobs in Toledo, Parma and Brookville, Ohio.

Groundbreaking is expected to take place in mid-2020.

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Groundbreaking is expected to take place in mid-2020.

Takata Troubles Force BMW Recall

DETROIT (AP) – BMW is telling owners of some older 3-series cars to stop driving them after another recall of dangerous Takata air bag inflators.

A driver in Australia was killed by an airbag malfunction, while another Australian and a driver in Cyprus were injured, according to government documents.

Bankrupt Takata is now recalling about 1.4 million more front driver inflators in the U.S. because they could explode and hurl shrapnel.

Included are more than 116,000 BMW 3-Series cars from the 1999 to 2001 model years. About 8,000 definitely have faulty inflators and should be parked, BMW said. The rest can still be driven. In addition, certain Volkswagen, Honda, Toyota and Mitsubishi vehicles made from 1995 to 2000 also are being recalled, but information on which models was not available Dec. 4.

Unlike previous recalls, the non-azide inflators do not use volatile ammonium nitrate to fill

the air bags in a crash. But the air bag propellant can still deteriorate over time when exposed to moisture and explode too fast, blowing apart the inflator body. They also might not fully inflate to protect people in a crash.

Takata says in government documents that it made about 4.5 million of the inflators worldwide but only a portion are still in use because the vehicles are so old. The faulty inflators have problems with insufficient seals.

In the recalls, BMW is recommending that people stop driving certain 1999 323i and 328i sedans made from July of 1998 through January of 1999. Spokesman Oleg Satanovsky said those cars have inflators that were made at a Takata factory and are known to be faulty because they were manufactured before production improvements.

BMW also is recalling another 34,000 323i and 328i sedans from 1999-2000 and 323Ci and 328Ci coupes from the 2000 model





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Buick Regal Ending Its Run in the North American Market

North American market.

In a statement to the media, GM spokesman Stuart Fowle said that "Buick continues to be ahead of the consumer shift toward SUVs. In fact, nearly 90 percent of Buick sales to date this year have been crossovers and sales have outpaced key competitors including Lincoln, Acura and Infiniti.

"Our lineup of premium SUVs will expand in the coming months when the Encore GX will become the fourth SUV in our portfolio, joining well-established nameplates such as Encore, Envision and Enclave.

Combined, these four premium SUVs give customers a great range of size, performance and innovative technologies in the industry's largest and fastest-growing segments, all connected by the strong design statement core to the Buick brand."

Although the Regal will no longer be offered in the U.S. and Canada, it will be sold in China where demand for sedans remains significant, Fowle said.

The latest edition of the Buick Regal GS was known in other parts of the world as the Holden Commodore VXR and the Opel Insignia GSi.

The vehicle is built in Germany. Writer Steph Willems wrote in the blog, "The Truth About Cars," in October that "the Regal's origins lie in the Germanbuilt Opel Insignia, with the current generation going on sale for the 2018 model year. Arriving as a five-door liftback and off-roadthemed TourX wagon, the Regal is not accumulating sales in the manner Buick's crossover lineup.'

Willems also noted that Buick was able to continue to sell the

It's official. Buick will discon- Regal even after GM sold Opel to tinue making the Regal for the Peugeot, thanks to a production contract.

But sales did not justify continuing to sell the Regal. Sales in the U.S. were down 19.6 percent through the end of September. This contrasts with the fact that overall, Buick sales have risen 1.4 percent since the start of the

Willems said that these sales figures come at a time when younger car buyers have switched from buying sedans to buying SUVs and CUVs.

Regal sales truly reflected this trend, Willems said. In 1999 Buick sold 74,000 Regal sedans. During the first three quarters of 2019, only 8,849 Regals were sold.

The history of the Regal goes back to 1973. It shared its front and rear styling with the Buick Century and used the same "Colonnade" pillared hardtop. What made the Regal standout was the use of frameless doors, unusual for a sedan.

The Regal's interior was considered more luxurious than models like the Century.

The iteration of the Regal lasted for about five years without significant change. The Regal was powered by Buick's 350 V8 engine and starting in 1975, Regal coupes came standard with Buick's revivied 231 cubic inch 3.8L V6 engine.

The second generation of the Regal was launched in 1978, and could be equipped with a turbocharged V6 engine with automatic transmission. The turbo versions were offered with either two- or four-barrel carbure-

The third-generation Regal was launched in 1988 and was the vehicle built on GM's new W platform. By1990 changes in the personal luxury market, the Regal



The Buick Regal's history stretches back to the 1970s, and versions of it were made in Germany and China.

was also offered in four-door editions along with the Cutlass Supreme and Grand Prix.

In 1997 the fourth-generation Regal was launched. The version of the Regal was based on GM's revised W platform, which was also used by the Oldsmobile Intrigue, the Pontiac Grand Prix, the Chevrolet Lumina and the Chevrolet Monte Carlo.

Differences between the Regal and the Century was considered mostly cosmetic, but the upmarket version of the Regal was offered with larger engines and more expensive trim. It also came with the option of the new

This generation of the Buick Regal GS came supercharged, in stead of turbocharged. This made the GS Buick's fastest vehicle since the 1991-1996 Roadmas-

The Regal GS was titled "the official car of the supercharged family." The fourth-generation Regal ended its run in 2004.

Buick did not launch the fifth-

generation until 2008. The new Regal was a four-door, five passenger mid-sized sedan with a front engine and a front-wheel drive layout.

It was based on GM's Epsilon II platform was very similar to the Opel Insignia. It was produced in

Russelheim, Germany in 2008. Another version was produced in Shanghai for the Chinese market.

The Regal received an update in 2014. It had several new features, including forward collision warning, lane-departure warning and blind-spot monitoring.

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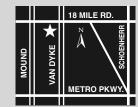
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