



THE FUTURE OF MOBILITY



February | 2019

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INTRODUCTION

WELCOME

Welcome to this Mobility Newsletter from CBMM.

The intention is to use this communication to share news and information – with partners and stakeholders who are interested and involved in progressing important Mobility issues.

In this issue there are insight pieces on the recent CES show in Las Vegas from leading business advisors EY. Also featured are a number of articles on *Electric Mobility* – including an introduction to the *Formula E Championship* and news from the recent CBMM & Partners Workshop and CBMM Niobium Formula E Mexico City E Prix.

This Newsletter also outlines further details of the *CBMM & Partners Business Workshop Programme* – as a demonstration of how CBMM is committed to developing mutual understanding and partnerships with regard to innovative and effective approaches to... *Materials Technology, E Mobility & Smart Cities*. It is only possible to cover chosen subjects in high-level detail, so for some subjects, contact information is provided.

CBMM hopes that you find this communication interesting and valuable, and so we look forward to receiving any feedback on the Newsletter.

Very Best Regards



Rodrigo Amado

Head of Mobility CBMM



CBMM | Niobium



BETTER PERFORMANCE



IMPROVED SAFETY



CLEANER ENVIRONMENT



INCREASED VALUE



ADVANCED TECHNOLOGY

Niobium's next frontier

EMISSIONS BY
CONTROLLING
SUNLIGHT

CBMM
Niobium 

3 TIMES HIGHER ENERGY
CAPACITY FOR
IMPROVES
LONGEVITY

CBMM
Niobium 

It's great to explore and learn about how Niobium can be used to make vehicles lighter, stronger and more sustainable.

Visitor to the
Niobium Experience at the Rome
CBMM Niobium E Prix



IN THE NEWS

FORMULA E & CBMM NEW 3 YEAR AGREEMENT

Building on the partnership developed in 2017-18, CBMM has agreed an expanded and extended relationship through to 2021.

The agreement will see CBMM take title sponsorship for a number of races and sponsor other races in selected key automotive markets. The Formula E relationship will also continue to link directly to the successful CBMM & Partners Workshop Programme. In addition, CBMM will also sponsor the end of season Formula E Championship Awards Ceremony for the next 3 seasons.



CBMM SPONSOR, PRESENT & EXHIBIT AT SIAT 2019 IN INDIA

SIAT EXPO 2019 took place in Puna, India January 16-18 - and is one of the key events in the international automotive calendar.

CBMM presented a keynote paper at the event, outlining the important benefits of Niobium Technology, when applied across a range of automotive components. **For more information on what CBMM had to say and offer at SIAT 2019 contact Pablo Salazar – pablo.salazar@cbmm.com**



NIONIUM CONTAINERS 20% LIGHTER

As Title Sponsor for the Formula E Mexico City E Prix, CBMM revealed a shipping container made with Niobium as the centrepiece of its Nb NIONIUM EXPERIENCE display.

A key technical feature of the container is that using Niobium makes the unit approximately 20% lighter. Beyond this simple but impressive fact, the container also contains solar panels to charge exhibits with and around the container that allow visitors to explore the wider benefits of Niobium Technology when applied across a range of vehicle applications.

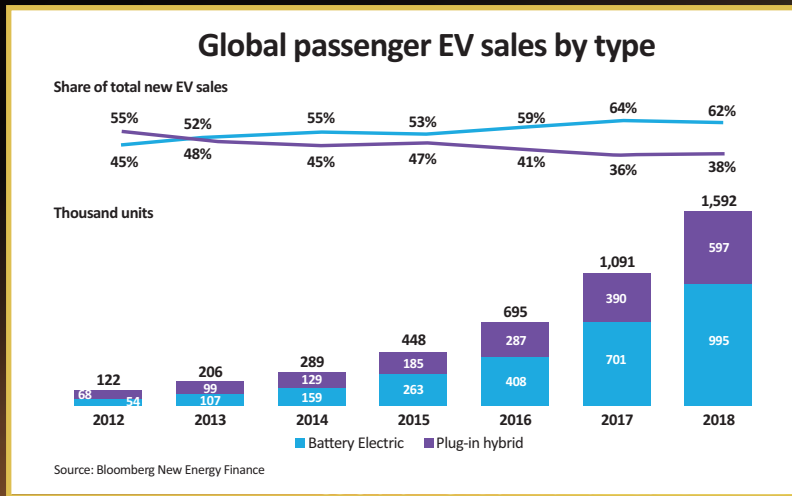


NIONIUM E BIKE ON THE MOVE

After some extensive testing and development of the Niobium e-Bikes in various locations and at events throughout 2018, EDG now prepares for production of the company's first model, the Niobium Superlight. The e-bike is lighter and more compact than previous versions, and its manufacture is expected to begin in the second semester of 2019.

For more information about Niobium e-Bikes contact:
Fabio Guillaumon fabio@edg.bike





THE FUTURE IS ELECTRIC

THE AUTOMOTIVE WORLD IS CHANGING

The number of ICE vehicles sold per year (gasoline or diesel) is expected to start declining in the mid-2020s, as EVs bite hard into their market.

'Shared mobility' cars will be a small but growing element. The advance of e-buses will be even more rapid than that of electric cars (read further in the report for a deeper view on e-buses).

While BNEF's long-term outlook remains similar to last year's predictions, our forecast sees the short-term growth in EV sales and market share grow rapidly.

The outlook for EV sales in the long term will be influenced by how quickly charging infrastructure spreads across key markets, and also by the growth of 'shared mobility'.

While we're optimistic on EV demand over the coming years, we see two important hurdles emerging: a risk of cobalt shortages in the early 2020s that could slow down the rapid battery cost declines seen recently, and the challenge of charging infrastructure.



CHANGE IS CONSTANT

By 2040 55% of all new car sales and 33% of the global fleet will be electric.

China is and will continue to be the largest EV market in the world through 2040.

EV costs. The upfront cost of EVs will become competitive on an unsubsidized basis starting in 2024. By 2029, most segments reach parity as battery prices continue to fall.

E-buses. Buses go electric faster than light duty vehicles.

Displacement of transport fuel. Electrified buses and cars will displace a combined 7.3 million barrels per day of transportation fuel in 2040.

Lithium-ion battery prices have tumbled in recent years. BNEF first started tracking EV battery prices back in 2010, when average battery pack prices were \$1,000/kWh. Fast forward to the end of 2017 and average prices hit a low of \$209/kWh, a remarkable 79% drop in seven years. Average energy density of EV batteries is also improving at around 5-7% per year.

Source: Bloomberg New Energy Finance



CBMM | Niobium Nb

FORMULA E
CHAMPIONSHIP



Niobium
CBMM



DEL ESTE E-PRIX 2018

TAG Heuer

Juli



CBMM AND FORMULA E

A GREAT PARTNERSHIP

Over the 2 seasons the company has been involved in Formula E, CBMM has built a number of excellent and progressive relationships with Formula E teams, partners and the Formula E management team.

These relationships have led to a number of mutually rewarding business partnerships, focused on how Niobium Technologies can deliver real value to automotive OEMs and suppliers. This association with Formula E has also formed part of the foundation for CBMM's innovative and valuable Materials Technology, E Mobility & Smart Cities Global Business Workshop Programme, with presenters and participants coming from leading business, government, technology, scientific and academic organisations.



CBMM's relationship with Formula E represents a great opportunity to build awareness of niobium and has proven to be a unique platform for developing partnerships to explore and progress the growing potential of sustainable mobility. We're delighted to be extending this partnership

*Eduardo Ribeiro,
CEO of CBMM*



CBMM's association with Formula E has delivered real benefits to the brand and the business.

In November 2018 CBMM and Formula E announced the agreement to a new 3 season partnership, enabling CBMM to continue to build its relationship with the Championship and relationship with a wide range of international partners across the automotive and wider mobility sector.

For Season 5, CBMM will be the Title Sponsor for the Mexico City E Prix and also be the Presenting Partner for the BMW i Berlin E Prix. In addition, CBMM will also sponsor a number of other races in the Season 5 calendar.

Building on being an Awards Partner for Season 4, CBMM will also sponsor the Season 5 Awards in New York, in July 2019.



I'm delighted to have CBMM partnering with the ABB FIA Formula E Championship for even more races in season five and beyond. They're a global advocate for the use of niobium in a range of products and using the research and development platform of the electric street racing series is a great way to deliver our shared vision of creating cleaner technologies for the future.

*Alejandro Agag,
Founder & Chairman of
Formula E*

		CBMM NIOBIUM MEXICO CITY E-PRIX 2019
<small>RACE SPONSOR</small>		<small>SATURDAY 16 FEBRUARY</small>

SEASON 5 CHANGES

FORMULA E SEASON 5

MARKING A NEW ERA OF FORMULA E

Formula E is the only series that brings unpredictable wheel-to-wheel combat to the heart of the world's most progressive cities. Real racing rivalries are settled on the streets. Eleven teams, nine global car manufacturers and 22 cars and drivers race against each other as they bid to be crowned champion.

Marking a new era of Formula E, the 2018/19 season sees the radical Gen2 car make its debut on the city streets for the very first time.

NEW 'HALO' SAFETY FEATURE

NEW TEAMS, DRIVERS

GEN 2' NEW DESIGN

NEW LOCATIONS: SAUDIA ARABIA,
SANYA CHINA, BERN SWITZERLAND

ONE CAR (BATTERY) FOR WHOLE RACE

'ATTACK MODE' WITHIN RACES



With double the energy storage capacity of the Gen1 car, the Gen2 racers can go the whole race distance, making mid-race car swaps a thing of the past but also demonstrating the progress made in all-electric mobility.

With 250kW of power, the Gen2 will accelerate from 0-100km/h in 2.8-seconds and go on to a top speed of 280km/h. Greater speeds and increased power means more action on track and, with just one car per driver, there's everything to lose.

All four former champions return to test their mettle in the new FIA Formula E Gen2 car, with Jean-Eric Vergne hoping to become the first back-to-back champion in the history of the series with DS Techeetah.

Six fresh faces will be facing their first Formula E race in less than a month, with Stoffel Vandoorne and Gary Paffett representing newcomers HWA Racelab, Max Guenther lining up for Geox Dragon, Felipe Massa for the Venturi Formula E Team, Alexander Albon for Nissan e.dams and Alexander Sims for BMW i Andretti Motorsport.

Several other top talents are returning to the championship for the upcoming campaign having raced in Formula E before but not contested the full fourth season – these include Robin Frijns for Envision Virgin Racing, Tom Dillmann for the NIO Formula E Team. Felix Rosenqvist returns to the Championship, taking the place of new Mahindra rookie driver Pascal Wehrlein for the first round of the season.

“Formula E really can be a powerful tool to change people’s perception of electric cars.”

Leonardo DiCaprio



For more information about Formula E Season 5 take a look [here](#).



GEN1 VS GEN2: THE COMPARISON

Technical Specifications

FIA Formula E	Gen 2	Comparison to Gen 1
Overall length	5160mm	+160mm
Overall width	1770mm	-10mm
Overall height	1050mm	remains the same
Front track	1553mm	+25mm
Rear track	1505mm	+13mm
Ride height	75mm (max)	remains the same
Wheelbase	3100mm	remains the same
Minimum weight (inc.driver)	900kg (battery 385kg)	+20kg (battery +65kg)
Maximum power	250kw, equivalent to 335bhp	+50kw, +67bhp
Race Mode (maximum power available)	200kw, equivalent to 270bhp	+20kw, +30bhp
Maximum power regeneration	250kw	+100kw
Maximum speed	280km/h (174mph)	+55km/h, +34mph
Acceleration	0100km/h (0-62mph)	-2.8s

FORMULA E TEAMS & DRIVERS

Audi Sport ABT Schaeffler

ALL TIME STATS
Wins: 10, Podiums: 35, Races: 46

TEAM INFO



#66



Daniel ABT

#11



Lucas DI GRASSI

BMW i Andretti Motorsport

ALL TIME STATS
Wins: 1, Podiums: 6, Races: 46

TEAM INFO



#28



Antônio Félix DA COSTA

#27



Alexander SIMS

DS Techeetah Formula E Team

ALL TIME STATS
Wins: 5, Podiums: 16, Races: 25

TEAM INFO



#36



André LOTTERER

#25



Jean-Éric VERGNE

Envision Virgin Racing

ALL TIME STATS
Wins: 7, Podiums: 19, Races: 46

TEAM INFO



#2



Sam BIRD

#4



Robin FRUNS

FORMULA E TEAMS & DRIVERS

Geox Dragon

ALL TIME STATS
Wins: 2 Podiums: 9 Races: 46

TEAM INFO >



#7  **Lop**

#6  **GUN**

José María LÓPEZ
Maximilian GÜNTHER

Nissan e.dams

ALL TIME STATS
Wins: 15 Podiums: 26 Races: 46

TEAM INFO >



#23  **BUE**

#22  **ROW**

Sébastien BUEMI
Oliver ROWLAND

HWA Racelab

ALL TIME STATS
Wins: 0 Podiums: 0 Races: 1

TEAM INFO >



#5  **VAN**

#17  **PAF**

Stoffel VANDORNE
Gary PAFETT

Panasonic Jaguar Racing

ALL TIME STATS
Wins: 0 Podiums: 1 Races: 25

TEAM INFO >



#3  **PIQ**

#20  **EVA**

Nelson PIQUET JR.
Mitch EVANS

Mahindra Racing

ALL TIME STATS
Wins: 3 Podiums: 16 Races: 46

TEAM INFO >



#64  **DAM**

#94  **WEH**

Jérôme D'AMBROSIO
Pascal WEHRLIN

Venturi Formula E Team

ALL TIME STATS
Wins: 0 Podiums: 3 Races: 46

TEAM INFO >



#19  **MAS**

#48  **MOR**

Felipe MASSA
Edoardo MORTARA

NIO Formula E team

ALL TIME STATS
Wins: 2 Podiums: 6 Races: 46

TEAM INFO >



#16  **TUR**

#8  **DIL**

Oliver TURVEY
Tom DILLMANN

For more information visit: www.fiaformulae.com/

ABB FORMULA-E
FIA FORMULA-E CHAMPIONSHIP



CBMM BRINGS NIOBIUM TECHNOLOGY TO EXTREME E

Extreme E is a radical new sport and entertainment concept, with the first event set to take place in January 2021. Extreme E will race across the world's most remote environments to demonstrate the performance of electric SUVs in extreme climatic conditions – while highlighting the impact that climate change is already having on these delicate ecosystems. The fully-funded venture is spearheaded by motorsport legend Gil de Ferran and electric mobility pioneer Alejandro Agag, with Continental Tyres announced as a founding partner and CBMM as niobium supplier.

Niobium technology from CBMM will deliver a lighter, stronger and more sustainable structure for all Extreme E vehicles. This partnership builds on the ongoing relationship between CBMM and Formula E which started in 2017, with a commitment through to 2021.

For more information about the EXTREME E concept please [take a look here](#).



EXTREME E

FACE TO FACE MAGIC IN MEXICO CITY

Leading international mobility and automotive OEMs, suppliers, academics and advisors met in Mexico City for the latest CBMM & Partners Workshop on February 15.

The Workshop explored issues, innovations and insights in a number of areas including vehicle lightweighting, battery technologies, and EV cars, trucks and motorcycles. In particular, how Niobium plays a key role in innovative materials technologies was explored throughout the Workshop.

At the event, participants also met and talked with 2017 Formula E Champion Lucas di Grassi, who went on to win the CBMM Niobium Mexico City E Prix – and the group also heard from Formula E Founder and CEO Alejandro Agag, who talked about Formula E and new race format being developed, EXTREME E.

The outstanding feedback so far has suggested that the unique opportunities to learn and network have been greatly appreciated – and that new partnerships have been formed to undertake future collaboration.

Presentations delivered at the Mexico City Workshop are available [here](#).



*"An eye-opening experience, it's been fantastic –
I have learned a lot about Niobium"*

Northwest University

*"The whole experience has been really good,
a mixture of hard work and great networking"*

Sandvik

*"The experience has exceeded my expectations,
I made a whole series of contacts and have built
some interesting relationships"*

Lightning Motorcycles





■ CLOSE TO THE ACTION IN MEXICO CITY

Following on directly from the Mexico City Workshop, the group visited the Formula E track for a unique ‘back-stage’ opportunity to visit race team garages. In addition, the group experienced first-hand the thrilling excitement of driving around the Formula E track at speed, as passengers in BMW electric vehicles, with qualified test drivers. This special experience allowed CBMM guests to fully appreciate the power and performance as well as safety characteristics of electric racing vehicles.

Here are some additional comments from those who had this special experience:

“A great event, It was an amazing opportunity to exchange ideas about the future of mobility”

Arcelor Mittal

“A great workshop and amazing race day – a great group and memorable event”

Cummins

“It was such a unique experience, thanks to all involved”

Metalsa



EXCITING ACTION AND RESULT IN MEXICO CITY

As title sponsor in Mexico City, the CBMM group hoped for and looked forward to an exciting race. Following a dramatic crash involving Brazilian driver Nelson Picquet Jr and a resultant delay, the race restarted. What followed demonstrated all the thrills and excitement that Formula E racing represents. Lucas di Grassi driving for the Audi Sport ABT Schaeffler team, chased down race leader Mahindra's Pascal Wehrlein, overtaking him on the very last corner as Pascal's car ran out of energy.

To see exactly what happened, watch the 5 minute race highlights [here](#).

For the CBMM group this exciting end to the race, completed a rewarding and valuable few days... sharing ideas about innovative materials technologies, discussing important e mobility developments, and building future opportunities for collaboration – all topped-off with a unique and memorable experience of electric vehicle technology in action.

"First class event, awesome mix of talented people and companies and great insights"

North American Council for Freight Efficiency

"I never imagined to learn so much in such a short time and all the while being cared for as if family"

AED Motorsports

"It was just perfect, an unforgettable time in Mexico"

Obvio ! + FNM



PARTNERS WORKSHOP PROGRAMME

Over the last 2 years more than 200 OEM, business, technology, Tier 1 supply, scientific, government and media organisations have participated in the CBMM Global Business Workshop Programme. Presentations have been made from sector leaders including: ABB, ANTAI, Aperam, EY, FEI, Mahindra, McLaren, Porsche, Roborace, Qualcomm, SSAB, Toshiba, University of Hong Kong and University of Michigan.

“I understand better the value of Niobium and how CBMM can be more innovative – and feel much closer to them now.”

EY

“The workshop was incredibly valuable, as was meeting with others involved in developing new technologies.”

Mercedes-Benz

“The Workshop was a great opportunity to talk about battery innovation and meet others to learn about new technologies.”

Toshiba

“I found out a great deal about different applications for Niobium. Well organised and well worth it.”

McLaren

“A great group to work with – an outstanding few days.”

University of Michigan

“The workshop was fantastic and the organisation superb.”

PSA



Based on the successful pattern developed over the last 2 years, the CBMM & Partners Workshop Programme precedes Formula E races in selected locations around the world, so in the first half of 2019 this means workshops will run as follows:

In Mexico City	February 15	Material Technology & E Mobility Workshop
In Hong Kong	March 8	Materials Technology, E Mobility & Smart Cities Workshop
In Berlin	May 24	Materials Technology & E Mobility Workshop

Already attendee numbers are at double previous events, and keynote presenters are confirmed from sector leading automotive OEMs, Tier 1 suppliers and advisors and other respected mobility organisations. **For further information about the CBMM & Partners Workshop Programme contact: Georgia Bemfica georgia.bemfica@cbmm.com**





■ OEMS ARE PRESENT BUT CONSUMER FOCUS AT CES 2019

The biggest surprise is the ever-increasing number of automotive manufacturers attending this year.

The number of connected products and solutions for automakers, consumers, and enterprises provided a further glimpse into the future of mobility. The automotive industry is moving towards enhanced safety, automated driving and greener vehicles. This shift continues to drive announcements as automotive industry players unveiled innovative technologies such as air taxis, voice assistant technology and crawling cars, to name a few, as the gradual update of electric vehicles (EVs) – and eventually, autonomous vehicles (AVs) continues. Here are some takeaways from what I observed:



Uber



Focus on vehicle connectivity continues to rise with emphasis on V2V and V2I communication

Vehicle connectivity created heavy interest as more players look to launch early commercial AV fleets this year. Vehicle to vehicle (V2V) and Vehicle to Infrastructure (V2I) communication will be key enablers for AV rollout, allowing cars to identify other vehicles, obstacles, process traffic light signals, road signs and interact with other smart transport infrastructure.

New vehicle types to complement public transport

Efforts around AV testing slowed down last year in the aftermath of incidents involving AVs, and increasing scepticism around the technology readiness. OEMs and suppliers also took stock of their adeptness of technology, and remained measured in boasting advances in automated driving.

However, this has not stopped some of the innovative players from displaying their technological prowess at the CES with new vehicle launches, including self-driving trucks and a concept driverless shuttle.

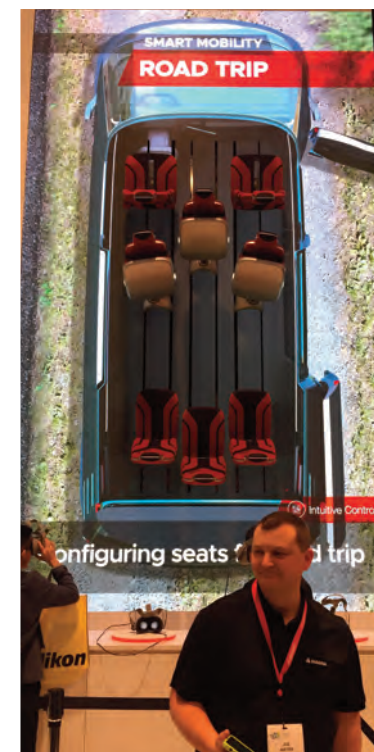
Solutions to improve vehicle safety and interiors drew increased attention

Automotive suppliers and OEMs brought technologies such as sensors and LIDAR to showcase how advancements in sensor technology and development of new capabilities can enhance vehicle and passenger safety, with a focus on features such as automatic braking, traffic and lane departure warnings.

Consumers steal the show with high-tech focus on inside vehicle experience

Start-ups demonstrated technologies that could help monitor driver behaviour in real time. In addition, personalization was also featured across the show through VR and AI technology that recognizes human emotions. Consumers can delight in mood sensor lighting, music selection and more as the vehicle determines your stress and even comfort around body temperature.

With all these new advanced technologies and products, it will be interesting to see how these translate into real world use: it could shape up to be a very promising year ahead for the mobility industry.



Written by John Simlett who is the Global Advisory Leader, Future of Mobility at EY and a regular presenter at the CBMM & Partners Workshops. You can contact John at jsimlett@uk.ey.com



FUTURE TECHNOLOGIES & VALUE – NOW

Advanced Engines

Niobium technologies can make engine blocks and cylinder heads lighter, stronger and more resistant to wear and failure. The inclusion of Niobium also allows for more complex and innovative designs to be produced without loss of performance or reliability.

Resilient Electronics

A range of niobium products can be used to produce capacitors, inductors and other components including... Sensors e.g. rain, light sensor, seat weight, gear box, drive train, temperature, parking, tyre pressure, airbags and battery cell temperature - Electric Controls e.g. seat adjustment and heating, window and mirror adjustment, fuel, water, oil and water pumps, lamp/LED driver and electronic power steering and - Electronic Circuits e.g. air conditioning, GPS location system, infotainment, satellite radio, keyless system, cruise control, remote start, start-stop system, power converters, crash avoidance circuit, telematics control unit, dashboard systems and car alarms.

Smart Windows

Niobium oxide glass is under development to create smart windows that can dynamically control the amount of visible sunlight and solar heat into a vehicle. Niobium smart windows improve the driver and passenger experience and enable fuel savings whilst decreasing CO2 emissions.

Faster Wireless Charging

Niobium nanocrystalline materials can be used to improve magnetic shielding in wireless charging devices to improve the efficiency of charging, reducing electrical losses.

Efficient E Engines

Niobium based materials (Nanocrystalline materials) are more efficient than currently used materials in the process of converting electrical energy from the battery into motion, especially in higher frequencies, playing an important role not only in recently developed electric motors, but also in inverter components.

Better Drivetrain, Brakes and Wheels

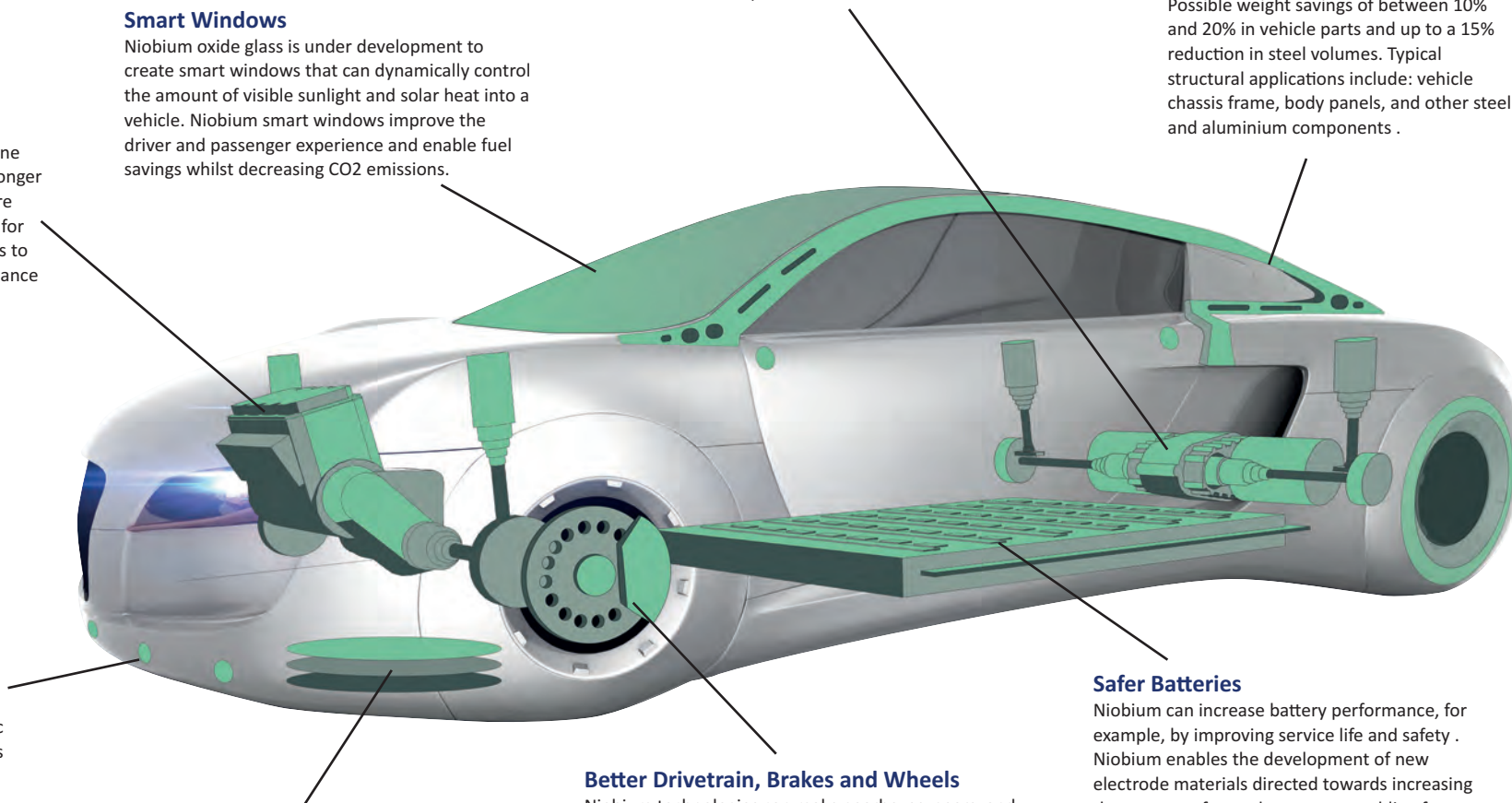
Niobium technologies can make gearboxes, gears, and transmissions lighter, stronger and more resistant to wear and failure. Niobium in aluminium or steel wheels can make them lighter and stronger while also allowing for more innovative designs. The application of niobium in brake rotors significantly increase its fatigue resistance, allowing for longer service life or lightweight designs.

Stronger Structures

Niobium's benefits include increasing lightness, strength and toughness whilst simultaneously improving formability and weldability of key components. In addition, Niobium can significantly improve production process efficiencies making vehicles easier and cheaper to produce. Possible weight savings of between 10% and 20% in vehicle parts and up to a 15% reduction in steel volumes. Typical structural applications include: vehicle chassis frame, body panels, and other steel and aluminium components.

Safer Batteries

Niobium can increase battery performance, for example, by improving service life and safety. Niobium enables the development of new electrode materials directed towards increasing the amount of stored energy or enabling faster charging times. The niobium-containing electrode capable of fast-charging also helps prevent short circuits that cause fires, resulting in safer batteries with longer life cycles.

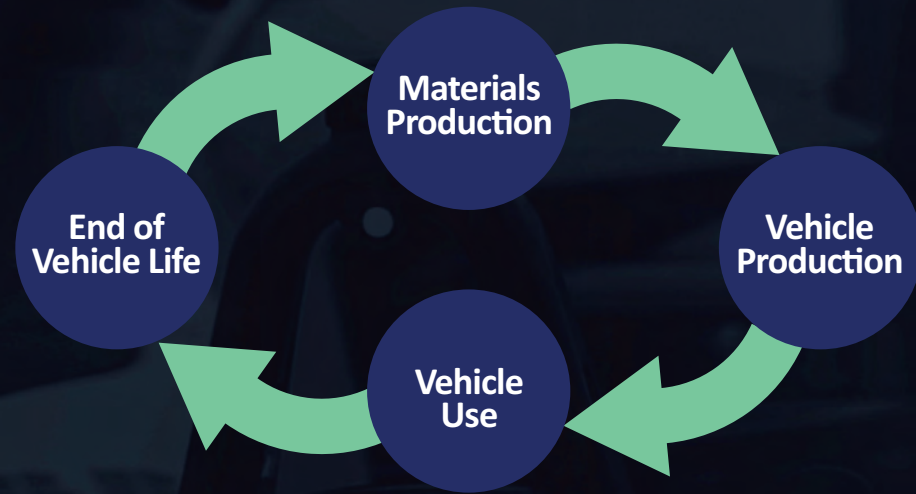


FUTURE TECHNOLOGIES & VALUE – NOW

ADVANCED MATERIALS TECHNOLOGY

Through its own R&D programmes and collaboration with technical partners, CBMM is constantly developing new product applications where Niobium can improve product qualities and performance characteristics.

Niobium increases sustainability in all stages of the automotive industry



BETTER PERFORMANCE

- Niobium produces stronger, lighter and tougher vehicles
- Possible weight savings of between 10% and 20% in vehicle parts
- Up to a 15% reduction in steel volumes
- Vehicles are easier to make and with better product quality



IMPROVED SAFETY

- Niobium components are more wear resistant
- Niobium components are more reliable
- Lightweighting enables additional safety and comfort features



CLEANER ENVIRONMENT

- Niobium reduces use of materials and emissions
- Niobium reduces fuel consumption due to lightweighting
- Niobium components are 100% recyclable



INCREASED VALUE

- Niobium products last longer
- Lightweighting reduces fuel costs and tyre wear
- Niobium helps to reduce production costs



ADVANCED TECHNOLOGY

- New Niobium applications are continuously being developed
- Stronger, lighter high-performance steels – and innovative Niobium aluminium products
- Niobium technologies are being developed for batteries, sensors, wireless charging and glass

■ BUILDING THE FUTURE TOGETHER

A team of 1,700+ CBMM professionals is committed to providing cutting-edge niobium products and technology to more than 300 customers in 50 countries.

CBMM's technology initiatives and innovations are developed in two ways. First, the company's Technology Center is located at the world leading industrial complex in Araxá, Brazil and focuses on enhancing the production processes of existing niobium products and at the same time developing exciting new products.

The company also has a technology subsidiary, CBMM Technology Suisse, based in Geneva which coordinates efforts to develop new niobium applications worldwide.

For over 20 years CBMM has successfully partnered with a number of leading international organisations to research, develop and introduce new technologies to automotive, mobility and other markets. Current partners include:

- Leading Universities in China, Europe and North and South America
- Technology R&D and Innovation Consultancies around the world
- Tier 1 & 2 Suppliers around the globe
- Established OEMs and new entrants into the automotive and mobility sectors

To explore and discuss opportunities for potential partnership to develop and apply new high-value materials technologies, please contact CBMM Head of Technology Rafael Mesquita at rafael.mesquita@cbmm.com



CONTACT

FOR MORE INFORMATION

If you would like to know more about CBMM's mobility programmes – please contact CBMM Head of Mobility Rodrigo Amado at: rodrigo.amado@cbmm.com

And you can click [here](#) to find out more about niobium technologies and mobility programmes.

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CBMM
Niobium N₅

