

FACT SHEET XXL Round 5 FORMULA E MONACO

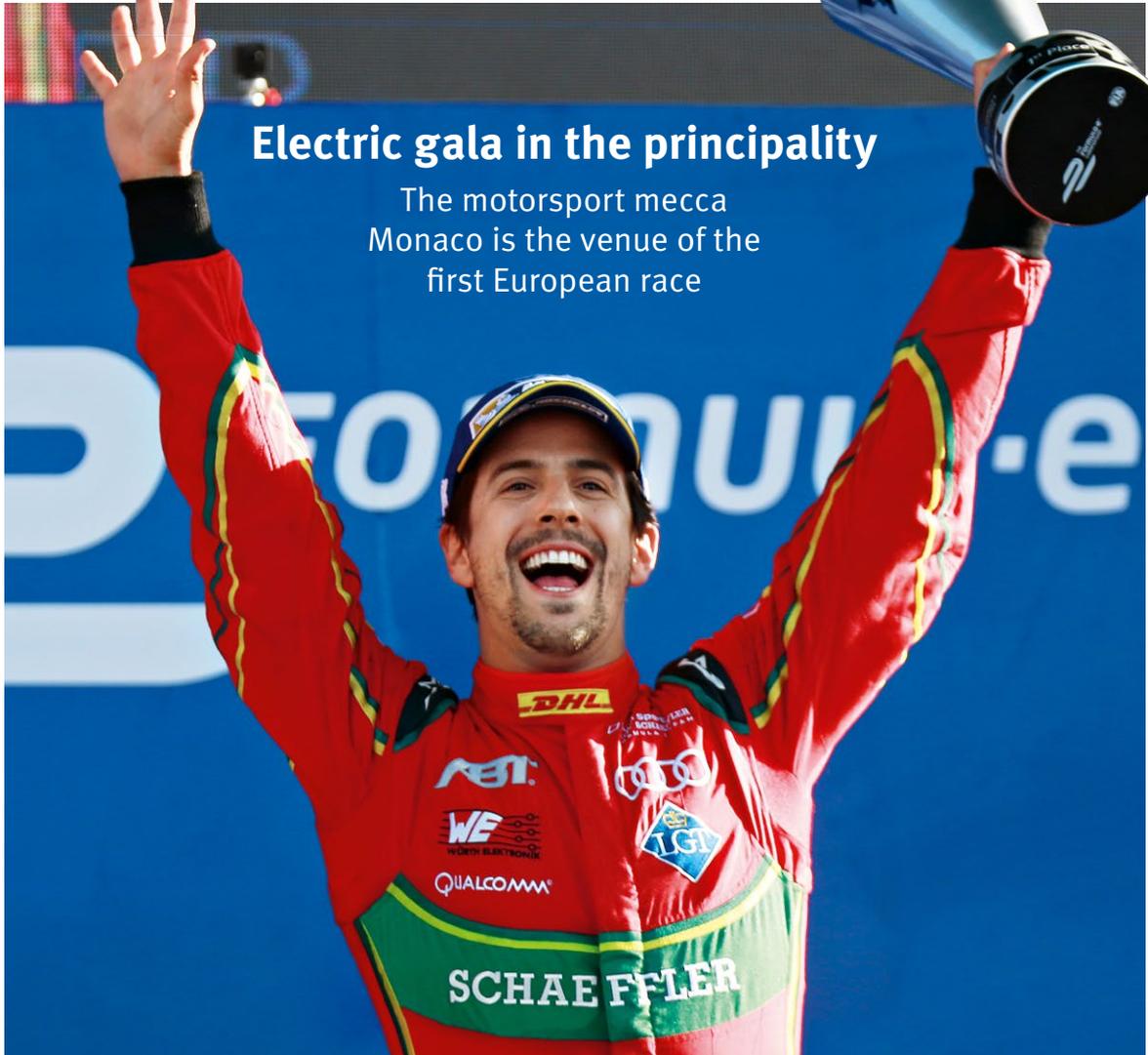
May 13, 2017

SCHAEFFLER



Electric gala in the principality

The motorsport mecca
Monaco is the venue of the
first European race



FIA
Formula-e
CHAMPIONSHIP

Innovative

Many details improved:
the ABT Schaeffler FE02

p. **8**



L. Di Grassi

Historic

Electric mobility in
automotive design

p. **20**

Editorial



Jörg Walz
Vice President
Communications and
Marketing Schaeffler
Automotive

Kickoff for Formula E in Europe: the track in the motorsport mecca Monaco – as a short version – is identical to the world-famous GP circuit. Two years ago, in its inaugural season, the world's first all-electric racing series stunned the Monégasques. A lot has happened since then and Formula E has

become superbly established. As the exclusive technology partner of Team ABT Schaeffler Audi Sport, we're pleased to present to you background information about the series, the drivers, the technology and our commitment.

Contact

Schaeffler Technologies AG & Co. KG
Communications and Marketing
Schaeffler Automotive
Industriestr. 1–3
91074 Herzogenaurach
presse@schaeffler.com
www.schaeffler.com

Contents

- 2 Schaeffler and the FIA Formula E
- 4 2016/2017 race calendar
- 6 Little space, lots of traffic: Monaco
- 8 FIA Formula E technology
- 10 ABT Schaeffler FE02 powertrain
- 12 Tech Talk: the cockpit
- 14 #ProjectIce
- 15 Team ABT Sportsline
- 16 The drivers: Lucas di Grassi and Daniel Abt
- 18 Electric mobility at Schaeffler
- 20 Electric mobility in automotive engineering
- 22 The Schaeffler Group
- 23 Schaeffler and Formula E facts & figures
- 24 Info on ePrix in Monaco

Videos



Racing for a reason



Down to the wire

Electrifying Team ABT Schaeffler Audi Sport



Welcome to the *Fu ture!*

Electric, in the heart of cities, all over the globe – this is Formula E. Forget everything that you knew about motorsport, and experience the world of the first ever fully-electric international race series

Formula E offers a number of distinct motor racing specialties. The most obvious feature is that, unlike conventional internal combustion engines (as in the DTM) or hybrid drives (as in the WEC), Formula E race cars are one hundred percent electrically-powered. The development of the electric motor as well as the transmission and subsequent software is unrestricted. Schaeffler and the team joined forces to design the entire powertrain, and this successful combination laid the foundation for clinching the vice-championship in the second season. The energy for all teams comes from identical batteries weighing approx. 320 kilograms and positioned in the rear of the car.

A second special feature is that Formula E races are not contested on conventional, per-

manent race tracks, but rather on temporary courses set up right in the heart of major cities. So, rather than the fans having to travel to events, racing is brought straight to the fans. Competing in these unusual locations is possible thanks to the low noise level of the Formula E racing cars and their zero emissions. Even the electricity that is used to charge the batteries is generated at the track using a glycerine-powered Aquafuel generator.

Electrifying around the world

In the motor racing scene, the venues are unique and exotic: Hong Kong, Marrakesh, Buenos Aires, Paris, Berlin and New York are just some of the metropolises where the ePrix are held, with backdrops such as Les Invalides, the skyline of Kowloon or the Statue of Liberty.

The grid line-up is studded with interesting names, including Nelson Piquet Jr, Nico Prost, Nick Heidfeld and, of course, the defending champion Sébastien Buemi.

As the sole German team, ABT Schaeffler Audi Sport again tackles the series with its regular drivers Daniel Abt and reigning vice-champion Lucas di Grassi. The other nine squads include outright factory teams such as Renault, Jaguar and DS Virgin as well as other top international teams from China, the USA and India.

The Formula E format is clear and concise: The practice, qualifying and race are all run on a single day. The race itself takes about 50 minutes – with pilots coming into the pits at around halftime to switch cars. ■

Around the *Globe*

On its ten-month world tour covering four continents, the Formula E race calendar features one highlight after the other. Four new metropolises – Hong Kong, Marrakesh, Montreal and New York – are playing host to a round of the fully electric racing series for the first time

1 **Kicking off with a podium**
Hong Kong China

October 9, 2016
Lucas di Grassi made an almost perfect start to the new season with a second place finish – and this from second last on the grid. A tactical masterstroke.

2 **First time in Africa**
Marrakesh Morocco

November 12, 2016
Positions five and six at the African premiere of Formula E after a strong fight-back from Lucas di Grassi and a spotless race from Daniel Abt.

3 **Pole premiere**
Buenos Aires Argentina

February 18, 2017
First pole position for Lucas di Grassi in Formula E – on seeing the checkered flag, he celebrates a third place. Daniel Abt, in seventh, again scores points.

4 **Sensational win**
Mexico City Mexico

April 1, 2017
Grid position 15, last after one lap – and finishing as the winner thanks to a brilliant strategy. Lucas di Grassi makes motorsport history. Following a great battle, Daniel Abt still comes in seventh.

5 **Back on the calendar**
Monaco

May 13, 2017
In its very first season, Formula E raced through the streets of the Monegasque Principality. Now, in season three, the electric race cars are making a comeback. The course is a shorter version of the traditional world-famous Grand Prix track.

6 **Historic**
Paris France

May 20, 2017
At just 1.9-kilometers in length, the race track around the historic Les Invalides is very short – ideal for the masses of fans. Lucas di Grassi won last year's race here.



9 & 10



Home race Berlin Germany

June 10/11, 2017
Last season, in the German capital, a one-two podium was achieved for the first time. An encore will be welcome – with two opportunities available. The German fans will be seeing a race on both Saturday and Sunday.



7 & 8

City of dreams New York USA

July 15/16, 2017
This is the first time a FIA automobile race is held in the middle of New York... with not only one but two races – on Saturday and again on Sunday – in the legendary port district of Brooklyn.

Grand Finale Montreal Canada

July 29/30, 2017
Just like in New York, Montreal hosts a double-header at the final weekend of the 2016/2017 season. The multicultural metropolis on the St. Lawrence River, where French is the official language, is crazy about motor racing.



11 & 12

Driver Ranking

P	Driver	Team	Pts
1	Sébastien Buemi (CH)	Renault e.Dams	76
2	Lucas di Grassi (BR)	ABT Schaeffler Audi Sport	71
3	Nicolas Prost (F)	Renault e.Dams	46
4	Jean-Éric Vergne (F)	Techeetah	40
5	Sam Bird (GB)	DS Virgin Racing	33
6	Felix Rosenqvist (S)	Mahindra Racing	20
7	Daniel Abt (D)	ABT Schaeffler Audi Sport	20
8	Nick Heidfeld (D)	Mahindra Racing	17
9	Nelson Piquet Jr. (BR)	NextEV NIO	15
10	Oliver Turvey (GB)	NextEV NIO	15
11	Mitch Evans (NZ)	Panasonic Jaguar Racing	12
12	António Félix da Costa (P)	MS Amlin Andretti	10
13	José María López (RA)	DS Virgin Racing	10
14	Jérôme D'Ambrosio (B)	Faraday Future Dragon Racing	10
15	Loïc Duval (F)	Faraday Future Dragon Racing	9
16	Robin Frijns (NL)	MS Amlin Andretti	8
17	Adam Carroll (GB)	Panasonic Jaguar Racing	4
18	Maro Engel (D)	Venturi	2
19	Stéphane Sarrazin (F)	Venturi	1
20	Esteban Gutiérrez (MEX)	Techeetah	1
21	Ma Qing Ha (CN)	Techeetah	0

Team Ranking

P	Team	Pts
1	Renault e.Dams	122
2	ABT Schaeffler Audi Sport	91
3	DS Virgin Racing	43
4	Techeetah	41
5	Mahindra Racing	37
6	NextEV NIO	30
7	Faraday Future Dragon Racing	19
8	MS Amlin Andretti	18
9	Panasonic Jaguar Racing	16
10	Venturi	3

CES: Schaeffler and Formula E in Vegas Las Vegas USA

January 7, 2017
A successful premiere of a virtual Formula E race in Las Vegas that received worldwide attention: In the simulator race supported by Schaeffler, the Formula E campaigners were pitted against the ten best fans. Daniel Abt finished in ninth place.



Small and precious

Monaco's traffic suffers from lack of space.
The best way to get around is on foot.
Those who can afford it use boats and helicopters

The Côte d'Azur in deepest blue, the sun shining bright – Monaco can literally be called a paradise. The yellow press likes to refer to it as a “haunt of the rich and famous.” After the Vatican, the principality on the French Mediterranean coast is the smallest state in the world, covering an area of a mere two square kilometers. So, it's no wonder that all of the hot spots can best be reached on foot. Five bus lines and numerous taxis are available as well. However, with 19,000 inhabitants per square kilometer, the principality also has the highest population density in the world. Consequently, traffic conditions in Monaco, particularly during rush hour, are extremely tense – so, it's a “haunt of the fastest” only on the Formula 1 and Formula E race weekends. Especially during these major events, the streets are frequently clogged although traffic conditions for passenger cars and trucks are generally tense. So, it's

advisable to just park your own car immediately after arriving in Monaco, especially since the city-state has a rule of only admitting vehicles registered in Monaco itself or in the French Département Alpes-Maritimes to the oldest and – in terms of population – smallest district Monaco-Ville.

There are several ways to travel to and from Monaco: on the highway, by train or – obviously for those enjoying the privilege – on a luxury yacht berthed in one of the most important marinas, Port Hercule or Port de Fontvieille. Very popular with the wealthy population as well is the helicopter shuttle from the nearby Nice airport.

An insider's tip from Lucas di Grassi

Lucas di Grassi is a proud resident of Monaco. The Brazilian campaigner of Team ABT

Schaeffler Audi Sport lives a mere 100 meters away from the finish line of the Formula E race. He, too, advises against exploring the place he now calls home using motorized vehicles. “Traffic here may really be chaotic at times. So, why not explore the area on your own two feet? There's so much to see and experience. Whenever I'm in a hurry I just grab my longboard because I can even get around on it a lot faster than by bus or taxi.” ■

2,000 euros

is the price of a berth for a 100-meter yacht at Port Hercule in the high season

80

public elevators, moving walkways and escalators help overcome elevation gain in Monaco

Also conceivable as a means of transportation in Monaco
At CES 2017 in Las Vegas, Schaeffler showcased the prototype of an electric kickboard



Electrically mobile Monégasque Lucas di Grassi knows how to quickly get from A to B in the principality



High-tech for the Race track

The ABT Schaeffler FE02 is a purebred racer packed with high-tech. While most of the components, including the battery and the entire aerokit, are identical for all contenders, Schaeffler and ABT have developed the entire powertrain

Tires

18-inch wheels with Michelin control tires (same tread as for production cars)

Brakes

Hydraulic dual-circuit braking system, adjustable brake force distribution

Steering wheel

Standardized steering wheel with paddles for shifting and recuperation, controls for various engine settings and a display for all key information

Battery

Developed by Williams Advanced Engineering, charging time: approx. 45 minutes

Aerodynamics

Adjustable front and rear wing



Suspension

Optimized suspension with increased stiffness and improved kinematics

Powertrain

Electric motor ABT Schaeffler MGU 01+, three-speed transmission

Dimensions

Length 5,000 mm
Width 1,800 mm
Height 1,250 mm
Weight min. 880 kg including driver

Power output

Practice and Qualifying 200 kW (270 hp)
Races 170 kW (231 hp) plus FanBoost

Chassis

Specification carbon fiber-aluminum chassis from Dallara



Video

The powertrain of the ABT Schaeffler FE02



Top team performance
ABT Schaeffler Audi Sport
is in contention for victory
in every race

Well equipped

The basic concept for the powertrain of the ABT Schaeffler FE02 remains identical to last year. For the 2016/2017 season, the engineers focused on improving many details

ABT Schaeffler Audi Sport heads off on the Formula E tour around the world with a powertrain that has been improved in many aspects. ABT Schaeffler MGU01+ – even the name makes it clear that the powertrain is based on the combination of the electric motor and transmission from the successful season two model; in ten races the two pilots Daniel Abt and Lucas di Grassi scored ten podium positions, three of which were victories.

Improved details

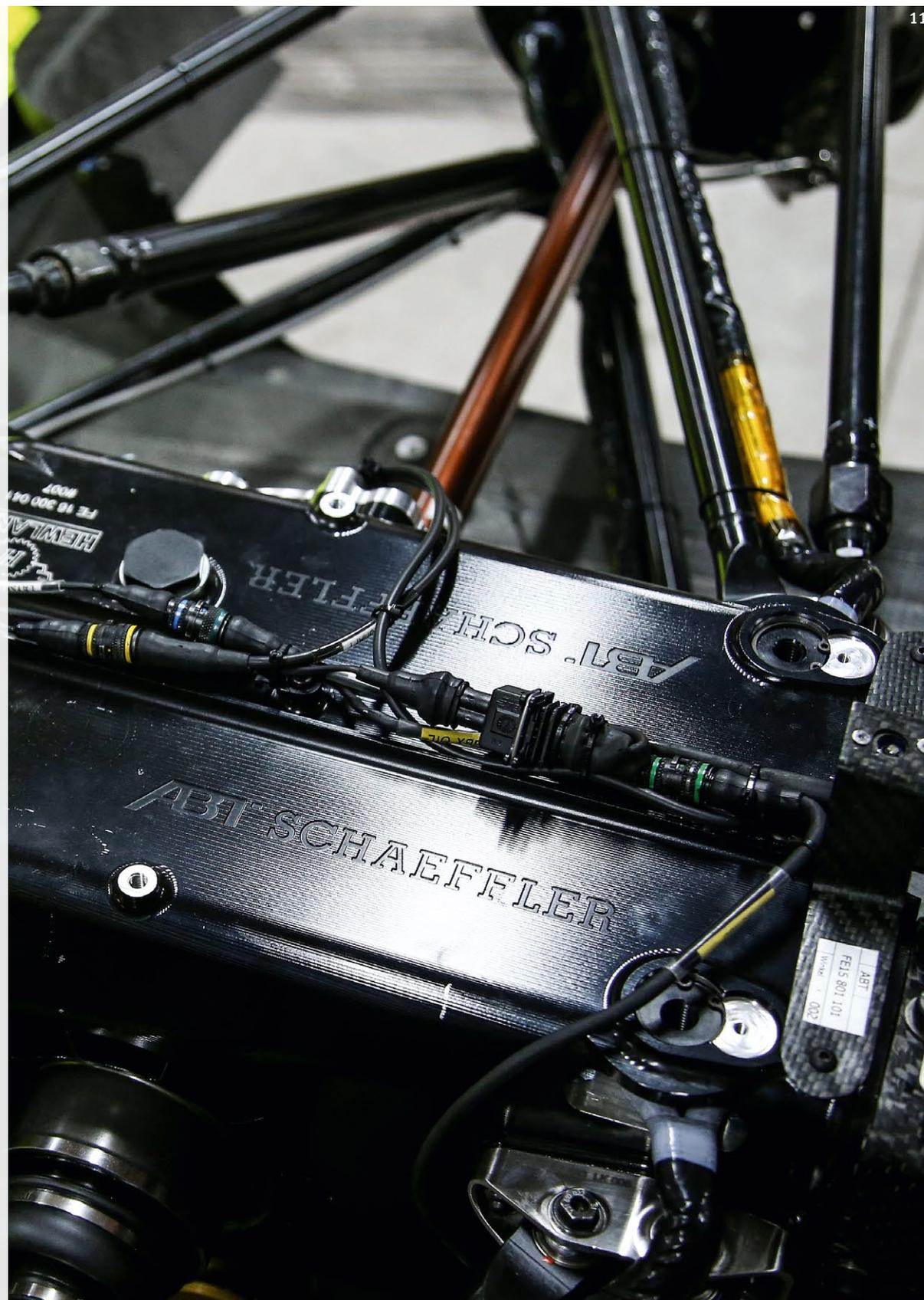
The engineers of the exclusive technology partner, Schaeffler, have focused on further improving the torque and drive efficiency. Moreover, the weight has been further reduced. The transmission features three gears and

3,959

*test kilometers were
covered by the team in
preparation for the season*

has also been further optimized in its efficiency and gearshift times.

“We feel well equipped for the challenges of the third season,” says Prof. Peter Gutzmer, The Chief Technical Officer and Formula E project leader at Schaeffler. “In its first season, our powertrain played an important role in our many successes. So, it quickly became clear that we should not only continue to focus on our proven concept, but also to further develop all aspects of our components. I would like to thank all the engineers who have worked with complete commitment in parallel to our fight for the title, so that we stay competitive and are preferably winning in the future as well.” ■



Full control

The cockpit “keyboard”



The steering wheel in Formula E almost resembles a game console: there are countless buttons, wheels, paddles and a colorful display. Hands-on insights by Lucas di Grassi

“The steering wheel itself is identical for all teams – however, we can customize the functions of all the controls and the display,” explains the Brazilian. “Every team, and sometimes even every driver, has their own ideas or wishes in this respect.”

A constant eye on energy consumption

Besides the standard functions found on any motorsport steering wheel, there’s one that’s particularly important in Formula E: the one that helps keep an eye on energy consumption. “The display shows us the respective state of charge and we can manually adjust the number of laps in order to have the maximum amount of energy per lap recalculated,” says di Grassi. Another exclusive feature of a Formula E steering wheel: the paddle to activate the FanBoost. ■

Schaeffler on YouTube
Race drivers explain modern
motorsport steering wheels



Control center provides guidance

- 1 Screen change on display
- 2 Adjustment to remaining laps
- 3 Activation of selected functions
- 4 Team radio
- 5 Transmission neutral
- 6 Brake settings
- 7 Adjustment to remaining laps
- 8 Reverse gear
- 9 Speed limiter full course yellow
- 10 Speed limiter pit lane
- 11 Output adjustment selector
- 12 Discretionary function
- 13 Upshifting
- 14 Activation of FanBoost (additional power)
- 15 Downshifting
- 16 Recuperation



Dr. Simon Opel
Director Special Projects
Motorsports at Schaeffler

Dr. Opel, can Formula E races be won thanks to the numerous functions on the steering wheel?

Yes, in Mexico, we just witnessed this with Lucas di Grassi’s sensational victory. He switched cars long before the race’s midpoint, which was far too early to have a chance with the energy left in the battery against his rivals who changed later. Clearly, Lucas profited from another safety car period and from another driver who slowed his immediate rivals. But the key to his victory, besides the strategically bold decision to stop early and our very efficient powertrain, was his wealth of experience and sensitive driving style which he optimized using the functions on the steering wheel.

What did he have to do?

Save energy and recuperate as much as possible. And for

this he needs the large number of functions and indicators on his high-tech steering wheel. When he normally applies the brake, the interaction between the brake and recuperation is automatically controlled. However, he has two other influencing factors which he can control on the steering wheel. One is that at the end of the race – when the battery gets very warm – he has to readjust the brake balance (rotary control knob 6) because the intensity of recuperation changes, which means that the braking effect via the recharging of the battery diminishes. The other – and Lucas masters this perfectly – is that he can manually recuperate at any time without braking (lever 16).

How small was his margin?

The residual energy was just enough for the celebration donuts ...

Spectacular statement against climate change



Eternal ice?
Formula E made a strong and spectacular statement in Greenland against global warming

In an unparalleled event, Formula E, Schaeffler and Lucas di Grassi have made a strong statement against global warming. In his Formula E car, the Brazilian turned laps on a glacier in Greenland

“Global warming is an issue that affects us all. The electric mobility can and will continue to play an important role against climate change in the future,” says Schaeffler’s CTO, Prof. Peter Gutzmer. “We regard Formula E with its innovations and new ideas as a driving force for mobility of the future and hence we were pleased to support this spectacular event.”

In conjunction with the Greenland government and environmental activists as well as teaming up with other partners such the Monegasque Prince Albert Foundation and the University of Southampton, the event required careful planning so that it could be implemented with the least possible input. Stunning images have attracted huge interest worldwide with around three million visitors on YouTube alone. The images also provided footage for a 48-minute documentary which was premiered on the occasion of the international climate change conference held in Marrakesh at the same time as the ePrix.



Lucas di Grassi
Formula E vice-champion in the ABT Schaeffler Audi Sport team (right) together with Formula E CEO Alejandro Agag



Unknown territory
The Formula E car is lowered onto the glacier

Global warming challenge

“The Greenland region is such a peaceful place. I was shocked to see how the landscape changes through global warming,” says Lucas di Grassi. “This experience gives me a completely new understanding of the challenge we face and what Formula E can contribute.” ■



#ProjectIce

A tradition of innovation



Hall of Fame
Success not only in single-seater racing

ABT Sportsline – the world’s leading tuner of vehicles from the Volkswagen Group and successful motorsport team in the DTM. Together with Schaeffler, the Allgäu-based squad enthusiastically tackles a new motorsport challenge in Formula E

ABT Sportsline is one of the most successful motorsport teams in Germany and Europe. Its history in racing dates back more than 60 years and began with initial victories scored by Johann Abt in the 1950s. The first recorded success took place in a dirt track race, followed by victories and titles in touring car, sports car and formula racing. 2009 has gone down in the company’s history as the most successful year to date: Timo Scheider won the DTM, Christian Abt the ADAC GT Masters in the Audi R8 and youngster Daniel Abt was victorious in the ADAC Formula Masters. Previously, in 2007, Schaeffler and ABT had jointly celebrated success as well: with the logos of LuK, INA and FAG

on his A4, Mattias Ekström won his DTM title number two.

Founded as a smithy in 1896, the ABT company has been continually developing ever since. Just one thing has never changed: the family still runs the company with about 170 employees and partners in 50 countries around the world. CEO Hans-Jürgen Abt now represents the fourth generation at the helm. For ABT Sportsline, the commitment in Formula E also marks a return to the roots, as the team celebrated success in formula racing as far back as in the early 90s – among others, with Ralf Schumacher in the cockpit back then. ■

Moments



1970
Johann Abt († 2003), father of Hans-Jürgen and Christian Abt, becomes European Touring Car Champion



2007
Sporting the logos of the Schaeffler Group, Mattias Ekström becomes DTM champion



2009
Christian Abt, Timo Scheider and Daniel Abt clinch three titles in a single year



2014
ABT and Schaeffler win the first ever Formula E race

A strong team in the *Cockpit*

In Lucas di Grassi (32) and Daniel Abt (24) the squad of Hans-Jürgen Abt has its dream team filling the cockpits of the two Formula E race cars. The experienced Brazilian and youngster Daniel Abt are not only fast and technically adept but perfectly harmonize with each other off the race track as well



Lucas di Grassi # 11

Highlights

- 2005 **1st** in Macau GP
- 2006 Formula 1 Test
- 2007 **2nd** GP2 series, Formula 1 test driver
- 2008 **3rd** GP2 series, Formula 1 reserve driver
- 2009 **3rd** GP2 series, Formula 1 reserve driver
- 2010 Formula 1
- 2013 **3rd** in Le Mans 24 Hours
- 2014 **2nd** in Le Mans 24 Hours, **4th** WEC
- 2015 **4th** in Le Mans 24 Hours, **3rd** FIA Formula E
- 2016 **3rd** in Le Mans 24 Hours, **2nd** FIA Formula E

Vita

- Date of birth August 11, 1984
- Place of birth São Paulo (BR)
- Domicile Monaco (MC)
- Height 1.79 m
- Weight 75 kg

-  lucasdigrassi.com.br
-  [lucasdigrassiofficial](#)
-  [@LucasdiGrassi](#)
-  [lucasdigrassi](#)

Daniel Abt # 66

Highlights

- 2007 **2nd** ADAC Kart Championship
- 2008 **8th** ADAC Formula Masters
- 2009 **1st** ADAC Formula Masters
- 2010 **2nd** ATS Formula 3 Cup
- 2011 **4th** FIA Formula 3 International Trophy, **7th** Formula 3 Euro Series
- 2012 **2nd** GP3 series
- 2013 GP2 Series
- 2014 GP2 Series, FIA Formula E
- 2015 **1st** in Le Mans 24 Hours (class), **11th** FIA Formula E
- 2016 **19th** ADAC GT Masters, **7th** FIA Formula E

Vita

- Date of birth December 3, 1992
- Place of birth Kempten (D)
- Domicile Kempten (D)
- Height 1.79 m
- Weight 70 kg

-  danielabt.de
-  [abtdaniel](#)
-  [@Daniel_Abt](#)
-  [daniel_abt](#)
-  [AbtDaniel](#)





Race track >>> Road

An electric circuit

Formula E has become a trailblazing test bed for future technologies. As an electric racing pioneer, Schaeffler has been involved in the all-electric racing series from day one. The knowledge gained there directly migrates to the production development departments, which means that this is an epitome of technology transfer. Formula E is an important piece of the puzzle in the development of electrified powertrains and concepts for sustainable mobility

“The Formula E commitment has been helping us gain a better understanding of the environment and systems of electric mobility,” explains Prof. Peter Gutzmer, Schaeffler’s Chief Technology Officer. Be it in terms of systems knowledge, cooling of the motor, the development of new materials or recuperation (recovery of braking energy) – these are important findings which also

advance the Schaeffler technology group aside from racing with respect to ideas, visions and technologies for networked mobility of tomorrow. Schaeffler has significantly increased the size of its development team for electric vehicle components and new mobility solutions within a short period of time and is working at full stretch on mobility for tomorrow. Six examples ... ■



E-bike

On bicycle expressways, powerful pedelecs – with Schaeffler hardware and software on board – provide a particularly fast and eco-friendly means of transportation for shorter distances. Branded as SCHAEFFLER VELOSOLUTIONS, the company offers an extensive and innovative product range. See also: www.schaeffler-velosolutions.com

Electric car

Schaeffler’s electric axles help make traffic noise in inner cities a thing of the past, moving forward with a wide product range from Herzogenaurach. 48-volt hybrid modules offer low-cost entry into the world of electric drive systems, continuing with powerful high-voltage powertrain systems through to all-electric axles.



Bio hybrid

The innovative and compact mobility solution for urban areas not only provides weather protection but, featuring four wheels including an electric pedelec drive, high driving stability and ample stowage space. In spring of 2016, Schaeffler unveiled this design and development concept that met with positive response around the globe.

E-board

In addition to its handy dimensions, this ideal means of transportation for short distances in urban areas boasts hydraulic brakes and a range of 25 kilometers. At CES in Las Vegas in January 2017, Schaeffler showcased this prototype. Integrated in the board is a battery that drives the rear axle via an electric motor. The e-board is controlled using a stick with an ergonomically shaped handle.



Robot taxi

Self-driving buses with integrated wheel hub motors from Schaeffler could provide a means of demand-based zero-emissions short-range public transportation in the future. All the drive components except for the battery are completely installed in the wheel. They include the electric motor, power electronics, the brake and the cooling system. eWheelDrive makes all-new drive concepts possible.

Hybrid vehicle

Hybrid components will continue to make conventional IC engine based powertrains more efficient. Schaeffler offers solutions across the entire range of electrification potential – from the 48-volt hybrid to the plug-in hybrid for various mounting positions to all-electric axles that assist the IC engine or serve as the sole short-term source of propulsion.





1899 Electrifying beginnings

The car picks up speed. The first car to exceed 100 kph: the electric race car "La Jamais Contente" made by Camille Jenatton. That was 1899, the same year that the Baker Motor Vehicle Company began to build electric cars. Fully electric or hybrid drive from Ferdinand Porsche for the Lohner electric vehicle. The same idea with the Mercedes Électrique and Mercedes Mixte. Up to 1939, Detroit Electric models with more than a 100-kilometer driving range. Around the turn of the century there were more electric cars on the road than combustion ones. Only with the improvement of performance, range and gas station networks do petrol-powered vehicles take over.

1972 The limits to growth

Electric mobility means drive from a fixed electricity supply – trams, trains, trolley buses. But gasoline-power comes under pressure. The 1972 Club of Rome "limits to growth": Finiteness of resources. 1974 oil crisis. The industry responds with rudimentary electric drives: A BMW 1602 Electro for the 1972 Olympics puts out just 43.5 hp. In a fleet test, the e-Transporters from Mercedes and VW cover only 60 to 80 kilometers. And the electric models of Opel, Mercedes and VW in a large-scale project on the German island of Rügen are based on existing cars. This is the wrong path.



Fast Currents

From the early alternative via public transport and back into the automobile: Electric cars have enjoyed a rapid history spanning more than 100 years and are only now coming of age



1996 Tailored for the future

Two things are needed: 1) A paradigm shift. In 1996, General Motors is the first major manufacturer to offer a car specifically designed for electric drive. Around 1,100 units of the EV1 are produced. Its cw value: 0.19. It reaches 130 kph with a range of around 250 km using 26.4 kWh from a nickel-metal hydride battery. 2) A technological leap, based on lithium-ion batteries from Sony. With these batteries, Tesla joins the car industry in 2008 with a roadster; 200 kph top speed, 350-kilometer range. In Japan, the Mitsubishi i-MiEV has been rolling off the assembly line since 2009. Today, there are many electric cars, and Schaeffler is a sought-after partner.

1997 Attractive alternatives?

Is it possible to have a million electric cars on the road in Germany by 2020? The bridging solution comes from the hybrid drive using the combustion engine and electricity. Toyota makes the breakthrough in 1997: The Prius is a million-seller. Electric drive is also possible without a battery: hydrogen and oxygen generate electricity in a fuel cell that drives the car. In 2003, a Mercedes A-class F-Cell is the world's first fuel cell passenger car to go into small-scale production. Since 2015, Toyota has produced the hydrogen model, Mirai.



2009 Motorsport

The milestones of electric mobility in racing: In July 2009, the first victory for a McLaren-Mercedes with hybrid drive in Formula 1. In June 2012, the first Audi win with diesel-electric drive at Le Mans. In September 2014, FIA Formula E is launched as the first race series with electric drive. Schaeffler is one of the pioneers with the ABT Schaeffler Audi Sport team. June 2015 heralds the first overall victory of Rhys Millen's electric race car against petrol-powered vehicles at Pikes Peak. September 2016: World record for electric drive by Venturi with 549 kph in Bonneville.



Mobility for tomorrow

For Schaeffler, innovation has been part of its corporate DNA since the foundation of the company. It is based on lateral and interdisciplinary thinking

Schaeffler is known as an innovative leader delivering a wealth of technologies that make automobiles more fuel-efficient, environmentally friendly, and safer, as well as products for trains, aircraft, wind turbines, and many other industrial sectors. Schaeffler can be found wherever things are in motion – and motion also means mobility. The challenges facing mobility of the future are immense. That's why Schaeffler is committed to its holistic "mobility for tomorrow" concept, geared to finding sustainable solutions for the world of tomorrow. ■



Mobility for tomorrow Under this concept, Schaeffler concentrates on four focus areas: environmentally friendly drive systems, urban mobility, interurban mobility and energy chain



Compact info



#11 Lucas di Grassi

- 🌐 lucasdigrassi.com.br
- 📘 lucasdigrassiofficial
- 🐦 @LucasdiGrassi
- 📷 lucasdigrassi



#66 Daniel Abt

- 🌐 danielabt.de
- 📘 abtdaniel
- 🐦 @Daniel_Abt
- 📷 daniel_abt
- ▶ AbtDaniel



ABT Schaeffler FE02

- Aerodynamics Front and rear wing adjustable
- Electric motor ABT Schaeffler MGU01+
- Battery Williams Advanced Engineering
- Transmission ABT Schaeffler, 3 speeds
- Brakes Hydraulic dual-circuit braking system, adjustable brake force distribution
- Suspension Optimized suspension with higher stiffness and improved kinematics
- Weight 880 kg, minimum (including the driver)
- Dimensions Length 5,000 mm, width 1,800 mm, height 1,250 mm



The ABT Schaeffler FE02 accelerates from 0 to 100 km/h in

2.9

seconds

200 kW

Power output in qualifying

170 kW

Power output in the race

56 kWh

of energy may be used by a driver per race

=

👤🏠 Two-person household (6 days)

❄️ Refrigerator, 150 liters (210 days)

💡 Light bulb, 60W (39 days nonstop)

📺 Television (15 days nonstop)

🍽️ Dish washing machine (70 wash cycles)

=

20,000

conventional AA batteries provide the same amount of energy

3

The 3 drivers with the most #FanBoost votes get 100 kJ more energy

1

FanBoost for second car

fanboost.fiaformulae.com

Schaeffler facts

- ≈ 87,000 employees worldwide
- 13.3 billion Euro turnover in 2016
- > 2,300 registered patents in 2016
- 25,000 active and pending patents
- 170 locations in 50 countries
- 75 factories worldwide
- 60 Schaeffler components in automobiles worldwide (average)
- 17 R&D centers worldwide

The Race track

Monaco 



Schaeffler

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Team ABT

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Schedule Sat, May 13, 2017 (local time)

- 08:00 – 08:45 Free practice 1
- 10:30 – 11:00 Free practice 2
- 12:00 – 12:36 Qualifying (4 groups)
- 12:45 – 13:00 Super Pole
- 14:05 – 14:35 Autograph session (eVillage)
- 15:00 Driver parade
- 15:23 Pit lane open
- 16:00 Race (51 laps)
- 17:05 Podium ceremony
- 17:15 – 17:30 Press conference (Media Center)



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