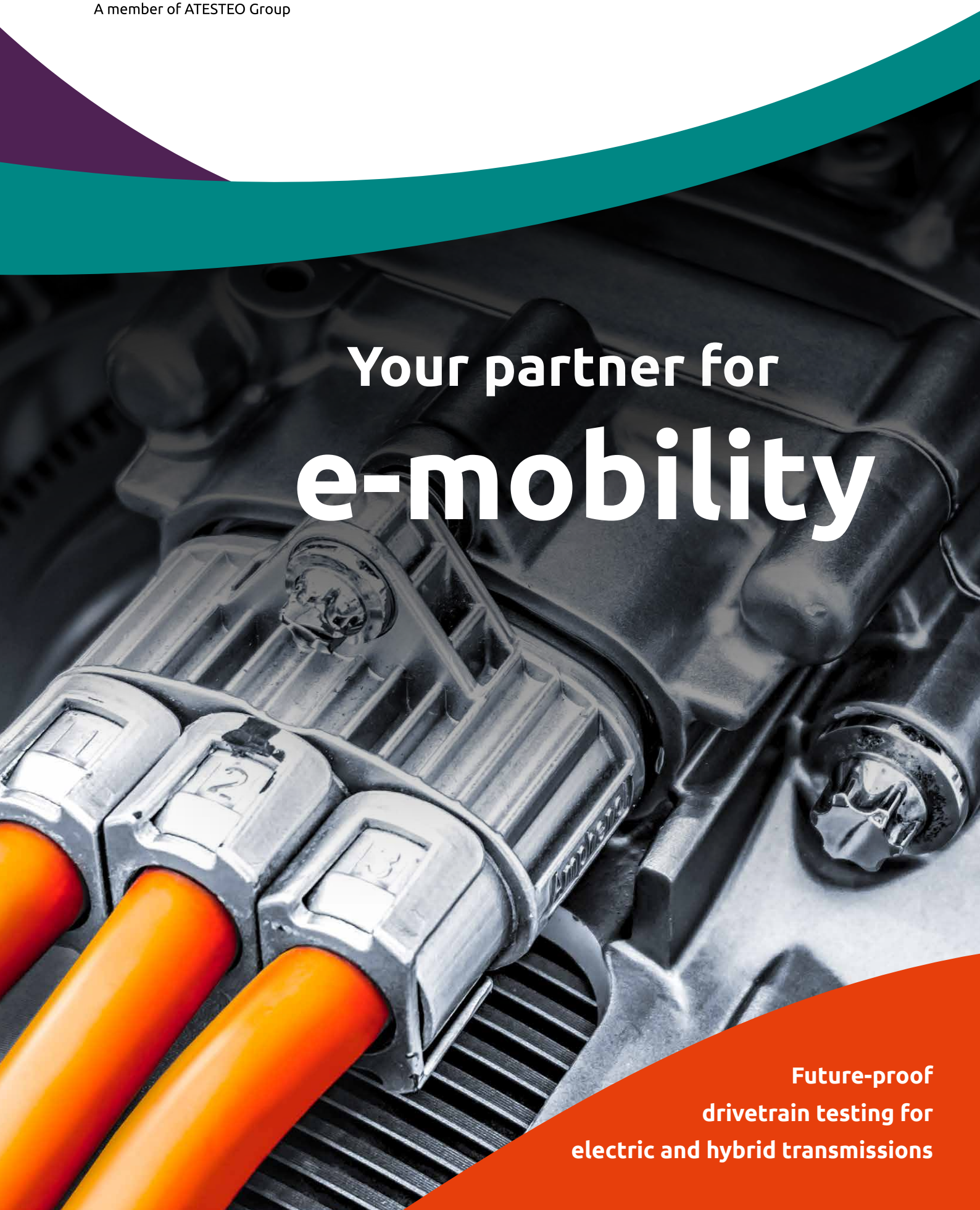
GRC

A member of ATESTEO Group

ATESTEO

Your partner for e-mobility



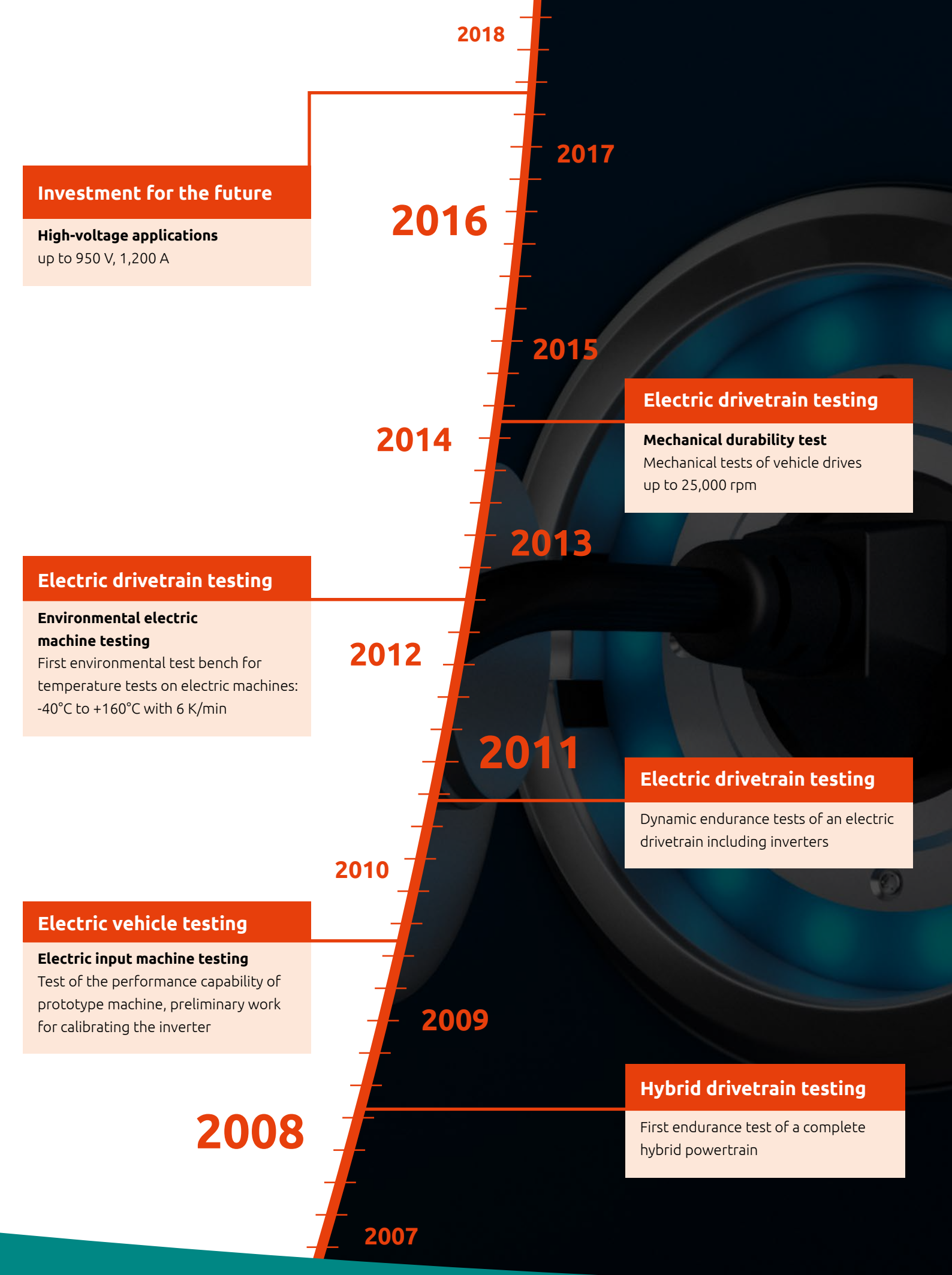
Future-proof drivetrain testing for electric and hybrid transmissions

Together for the drivetrains of tomorrow

e-mobility is the future. The automotive industry is investing much in the development of alternative drivetrains. We support them in this endeavour. As an established partner in the testing of drivetrains of electric or hybrid vehicles, ATESTEO offers all relevant test benches and services from one source. For years, we have conducted tests of electric motors, inverters, additional electric components, and hybrid engines; we also test battery systems. Our test benches are so multifunctional that we are able to adapt the services of our range of tests to the parameters of electric and hybrid drivetrains at any time. Additionally, with virtual test benches, we create the possibility of testing complex hybrid engines during the early phases of production. Special test benches with battery simulators, e-motor test benches, hybrid powertrain test benches, and NVH test benches for hybrid drive systems and electric motors complement our drivetrain testing offering in the field of e-mobility.

"Everywhere in the world, more and more consumers are turning to e-mobility. To meet this demand, the number of transmissions for electric vehicles is growing in the EU, in North America, and in the Asian-Pacific Region. We recognized the trend toward low-emission and emission-free drivetrains early on, having expanded our range of testing services accordingly. Since 2008, ATESTEO has conducted tests and simulations of electric and hybrid drivetrains for well-known vehicle and component developers. Already, more than 10% of all drivetrain tests at ATESTEO are tests of hybrid or e-drivetrains. Through years of competence and specialisation in this field, we have a view to the future, propelling the automotive industry forward in its development of drivetrains for electric and hybrid vehicles."

Dipl.-Ing. Wolfgang Schmitz
CEO/Chairman of the Board



2018

2017

Investment for the future

High-voltage applications
up to 950 V, 1,200 A

2016

2015

Electric drivetrain testing

Mechanical durability test
Mechanical tests of vehicle drives up to 25,000 rpm

2014

2013

Electric drivetrain testing

Environmental electric machine testing
First environmental test bench for temperature tests on electric machines: -40°C to +160°C with 6 K/min

2012

2011

Electric drivetrain testing

Dynamic endurance tests of an electric drivetrain including inverters

2010

Electric vehicle testing

Electric input machine testing
Test of the performance capability of prototype machine, preliminary work for calibrating the inverter

2009

Hybrid drivetrain testing

First endurance test of a complete hybrid powertrain

2008

2007

Everything for your e-mobility testing

Electric and hybrid vehicles make high demands on the transmission. Besides energy and environmental efficiency, driving pleasure is a key focus for consumers. To accomplish all these things, the drivetrain requires a maximum degree of efficiency. Using precise measurements, we assist you to identify and increase the degree of efficiency. To be able to support you effectively in the development of your drivetrains and prototypes, we permanently adapt our range of our e-mobility services at the test bench to the changing demands caused by rapid technical developments. Many well-known developers trust our competence in testing in the field of e-mobility. For many years, we have conducted tests related to the durability and efficiency of the drivetrain and its components on electric and hybrid vehicles at test benches.

Drivetrain testing for electric and hybrid drivetrains:

- Testing of electric motors, inverters, and auxiliary electric components
- Simulation of battery systems
- Testing of hybrid drive systems

Our electric motor test benches may be employed flexibly at installed engine power values between 320 kW and 2,700 kW for testing vehicle drive systems. For testing hybrid drives as well, ATESTEO offers state-of-the-art test benches that realistically simulate the operation of the powertrain. Following the same principle as the test benches for drivetrain models with electric and combustion engines, complex tests to analyse the properties of transmissions and hybrid systems are conducted. Generally, all hybrid or electric vehicle applications in operation are supplied in parallel with direct current.

Your advantage at ATESTEO:

So that all drivetrain components of an electric or hybrid vehicle may be developed in parallel, ATESTEO provides you prompt selective and realistic testing of your electric and mechanical drivetrain components. By doing so, we ensure that components work flawlessly before being assembled, and also provide you with the opportunity to optimise components during the development stage.

Our drivetrain testing competence for your development efforts:

Durability

Determine the service life of individual components of your transmission at the ATESTEO test bench! In a short time, through purposely overstraining the components, we generate a picture of the damage that represents the service life of your vehicle in line with real driving conditions. We can conduct corresponding tests for hybrid applications on our test benches with just electric components or combustion engines.

Efficiency

Check the optimisation of the degree of efficiency of your transmission at the ATESTEO test bench! With torque sensors and torque flanges, ATESTEO offers reliable double telemetry systems in combination with electric power analysers to measure the degree of efficiency of transmissions for electric or hybrid vehicles. Even efficiency levels of more than 98% can be measured extremely precisely using this method.

Environmental simulation

Identify interactions between your drivetrain and its environment at the ATESTEO test bench! The performance and service life of your drivetrain is substantively influenced by its environment. Recognising environmental factors early and allowing insights to be incorporated into the optimisation of your components is the aim of environmental simulation at the ATESTEO test bench.

Our range of services in the field of e-mobility

To test electric motors and inverters, ATESTEO undertakes at the test bench all testing services with respect to mechanical, electric, and thermal properties of the drivetrain components. In addition, we provide services to collect technical data on component cooling and overload capability of the torque characteristic, as well as on sound emissions and axial-radial vibrations. To analyse the characteristics of the transmission and hybrid system, complex tests are carried out at the test benches.

Endurance testing

- Endurance testing of gears and bearings
- Endurance testing
- High speed testing
- Durability testing
- Tests under torque
- Tests under rotational speed
- Pitting tests
- Wöhler curve

Efficiency testing

- Drag torque testing
- Efficiency measurements
- Oil level examinations
- System efficiency

Functional testing

- Performance test ECE-R 85
- Open-circuit voltage testing
- Oiling testing
- Deflection testing

Environmental simulation

- High temperature testing
- Thermal shock testing
- Low temperature testing
- Environmental testing

Testing equipment

ATESTEO offers you the full spectrum of services for your testing requirements.

DC sources for EV/HEV
- 450 V; 150 kVA; 500 A
- 600 V; 540 kVA; 600 A
- 1,000 V; 950 kVA; 1,200 A
- Programmable as battery simulator

DC sources for mild hybrids
- 60 V
- ±600 A
- Programmable as battery simulator

Input data
- ≤ 25,000 rpm; ≤ 113 kW
- ≤ 18,000 rpm; ≤ 200 kW

Output data
- ≤ 10,000 rpm; ≥ 530 kW
- ≥ 5,000 Nm; ≥ 1,000 kW

Power measurement
- High-resolution electric power analysers

Environmental simulation
- Air: –40°C to +160°C
- Gradient: 6 K/min
- 10% to 98% relative humidity
- Liquid: –35°C to +135°C

Accredited
ISO 17025:2005
(D-PL-19792-01-00,
D-K-19792-01-00)

Certified
ISO 27001:2013
ISO 9001:2015
ISO 14001:2015

The ATESTEO service commitment:

- Reliable and independent drivetrain testing partner
- Considerable expertise in transmissions and powertrains
- Reliable processes and results
- Competence in testing and pre- and post-processing
- Low operating costs
- Utilization management excellence
- High testing capacities
- Flexible to use
- Test bed setup is in line with drivetrain testing demand

A member of ATESTEO Group

Would you like to learn more about the services and advantages that we can offer you in the field of e-mobility testing? Then call us or mail us! Your ATESTEO expert is available for you at +86 512 6289 6000 or by email to info@atesteo.cn.com.

+86 512 6289 6000

info@atesteo.cn.com

ATESTEO Gear Research Center (China) Co., Ltd.
No. 11 Anzhi Street Suzhou Industrial Park
215024 Suzhou, Jiangsu Province
China
Telephone +86 512 6289 6000
Fax +86 512 6289 6039
info@atesteo.cn.com

ATESTEO GmbH
Konrad-Zuse-Strasse 3
52477 Alsdorf
Germany
Telephone +49 2404 9870 0
Fax +49 2404 9870 109
info@atesteo.com

ATESTEO is the leading specialist for drivetrain testing of combustion engines, electric motors, and hybrid vehicles, along with automotive product validation and engineering and equipment related to drivetrain testing.

www.atesteo.cn.com

Official WeChat