

# In Dialog.

Corporate Report 2016



# TÜV RHEINLAND

## PROFILE

TÜV Rheinland is a worldwide leading independent provider of inspection and testing services with a tradition going back more than 145 years. Around the globe, our employees stand for quality and safety of people, technology and the environment in nearly all aspects of modern life. We inspect and test technical plants and equipment, products and services, provide project and process support, and ensure information security for companies. Our experts train people in many professions and industries. For that purpose, TÜV Rheinland has a global network of certified laboratories, testing facilities and training centers.

For an optimal, future-oriented development of the Group, TÜV Rheinland Berlin Brandenburg Pfalz e.V. primarily focuses on its role as sole shareholder of TÜV Rheinland AG. Nearly all of TÜV Rheinland Group's operations are united under the umbrella of TÜV Rheinland AG.

### INDUSTRIAL SERVICES

- Pressure Equipment
- Lifting Equipment & Machinery
- Electrical Engineering & Automation
- Industrial Inspection
- Infrastructure & Civil Engineering
- Energy & Environment
- Project Management
- Materials Testing & Non-destructive Testing

### MOBILITY

- Periodical Technical Inspection
- Driver's License
- Car Services & Appraisal
- Engineering & Type Approval
- Rail

### PRODUCTS

- Softlines
- Hardlines
- Electrical
- Commercial
- Medical
- Solar

### ACADEMY & LIFE CARE

- Occupational Health & Safety
- Training & HR Development
- Labor Market Services & Private Schools

### ICT & BUSINESS SOLUTIONS

- IT Services & Cyber Security
- Telco Solutions & Consulting

### SYSTEMS

- Certification of Management Systems
- Customized Services
- Government Inspections & International Trade

IN TRUST

2015

2016

IN DIALOG

2017

IN ACTION

From climate change to digitalization: In our ever more dynamic world, the social challenges are continuously growing – in number, but also in complexity. In an age of uncertainty, only one thing seems certain: No state, no company, no scientific institution and no non-governmental organization can meet the major global challenges alone. Solutions can and will be created only through dialog. But it takes more than just talking to one another. Rather, it takes thinking with one another and acting together. In that spirit of exchange, TÜV Rheinland has been interacting with its wide range of stakeholders for 145 years now.

We are convinced that the best dialogs take place on equal footing. In that regard, we do not define ourselves by the number of words we use, but rather by their substance. We do not shy away from the discussion, but rather we look forward to the better result that it produces. We listen, take the time to understand, are open for alternative perspectives, and are committed when it comes time to carry out together what has been agreed.

The attentive ear that our voice finds worldwide is due to our integrity, our independence, our expertise, and our ability to develop competent solutions. Confirming this in daily dialog with our stakeholders is more than just our claim – it is what drives the successful development of TÜV Rheinland.



## TÜV RHEINLAND AG GROUP FIGURES

in € millions	2015 adjusted	2016
<b>Revenues</b>		
Industrial Services	543	520
Mobility	471	486
Products	485	519
Academy & Life Care	205	219
ICT & Business Solutions	133	131
Systems	162	166
<b>Figures, consolidated (according to IFRS)</b>		
<b>Total Revenues</b>	<b>1,881</b>	<b>1,918</b>
Germany	929	955
Abroad	952	963
Earnings before interest and taxes (EBIT) (in € millions)	91.3	122.6
EBIT margin (in %)	4.9	6.4
Cash flow from operating activities (in € millions)	155.0	163.4
Equity (in € millions)	317.8	346.2
Equity ratio (in %)	17.7	18.4
<b>Staff (annual average)</b>	<b>19,630</b>	<b>19,671</b>
Germany	8,043	8,286
Abroad	11,587	11,385



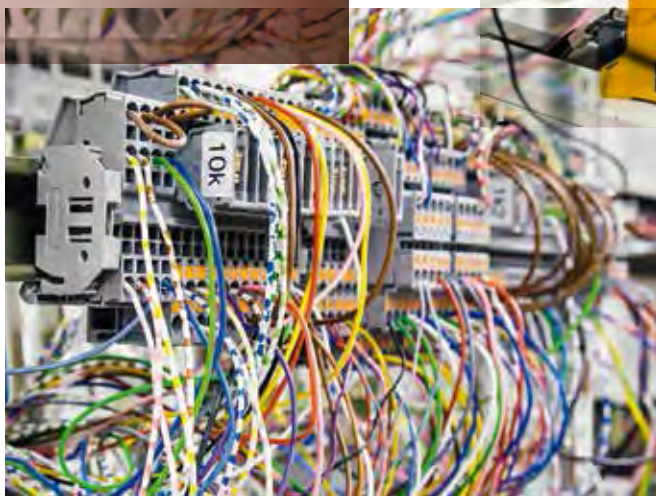
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*Dear Readers,*

As a service provider, what more could we wish for than the following statement? »The regular intensive exchange with TÜV Rheinland experts is almost more beneficial to us than the actual certifications.« After all, our success relies on trustworthy dialog – with our customers, with the public and the media, with key stakeholder groups, and of course also among ourselves, as pictured in these photos of our Group Management Meeting.

Our Corporate Report concerns our conversation with our customers and therefore becomes part of our dialog with you. We invite you to form an idea of what more safety and quality in the interaction between people, technology and the environment mean for us today: Whether about smart wireless tests in Silicon Valley, explosive testing for safe energy storage systems, helping industrial plants fight cyber criminality, or improving environmental protection in the textile industry – the subjects of our report are highly topical and extremely relevant, both socially and economically.

In dialog with our customers, we develop solutions concerning all of these topics – in order to enhance security, thereby building trust in an ever more complex, more closely interconnected world. In other words, we participate in the process of shaping a sustainable future that satisfies both mankind's and the environment's needs. Our commitment to sustainable action and to the principles of the UN Global Compact articulates that promise.

In order for us to be able to meet our responsibility over the long term, we need our strong brand. Protecting it is our most important strategic objective. Along with this, we have undertaken to achieve sustained growth in sales and profitability. We achieved that objective in 2016.

Business success is an essential prerequisite for us to continuously fulfill our role. Not least because, like many of our customers, we are intensively involved in the digital revolution. Although its consequences remain largely uncertain, one thing is clear: Security is also in demand in the digitalized world. This development is opening up many opportunities for us, which we want to grasp with our strong brand. We know that we will have to change in order to do so. And we will not wait to have change imposed on us.



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- 1 Vincent Furnari
- 2 Dr.-Ing. Michael Fübi  
Chairman
- 3 Stephan Schmitt
- 4 Thomas Biedermann
- 5 Ralf Scheller



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This is why we launched comprehensive improvement measures in our company under the banner »Do it. Best!« last year. The goal is to be closer to the customer, while implementing actions faster at the same time, and leveraging even greater use from the potential of our excellent worldwide network. This will be complemented by our investment program focusing on digitalization, supply chain services, energy and infrastructure, which we will also continue to promote, in order to develop the testing and inspection services of tomorrow.

For a successful 2016, I offer – also on behalf of my colleagues on the Executive Board – my special thanks to our employees. With their professional competence, their market knowledge and their enthusiasm, they are the key that enables us, as the engine of a modern society, to help shape the future.

*Yours*

*Michael Fübi*

Dr.-Ing. Michael Fübi  
Chairman of the Executive Board of TÜV Rheinland AG



**Prof. Dr.-Ing. habil. Bruno O. Braun**  
Chairman of the Supervisory Board  
of TÜV Rheinland AG

*Dear Readers,*

From a global perspective, overall economic development in the world's most important markets was generally deemed to be positive in 2016. This does not in any way alter the fact, however, that the degree of uncertainty over what the future holds in store for us has become greater. Unresolved problems underlying the numerous political crises are also having an increasingly pervasive effect on business. In addition, there is a growing tendency toward renationalization combined with the risk of trade policy isolation. On the other hand, the dynamic technical advancement process remains as strong as ever, driven above all by digitalization. As a necessary result, the worldwide demand for neutral certification is still growing and will continue to do so.

Against that background, TÜV Rheinland can look back over another successful business year. We achieved, and in some cases even exceeded, the objectives we set for 2016. This is true both of sales and even more so of the operating result. The magnitude of the latter documents the healthy and sustained earning power of our company. We more than compensated for the negative, crisis-related developments in our Brazilian business.



None of this would have been possible without a competent, highly motivated workforce that works purposefully to demonstrate the added value of our services worldwide, persuasively and with conviction. In this respect, we see ourselves in many areas of the overall economy as helpers and trendsetters serving the interests of our customers. Worldwide, over 20,000 employees at more than 500 locations on every continent rally around that claim, thereby making a significant contribution to economic progress and well-being. It should also be noted in this context that the relationship to the customer as the top priority in all divisions of the Group began the first year of its implementation in 2016 with a realignment of the organizational structure and is bearing fruit. All this fills us with confidence that TÜV Rheinland will continue to grow in accordance with its strategy, even in its thoroughly challenging competitive environment.

During the year under review, the Supervisory Board diligently and comprehensively fulfilled the duties incumbent upon it in accordance with the law and the articles of incorporation. We regularly monitored the Executive Board with regard to the leadership of the company and provided it with advisory support relative to strategic development as well as essential current measures. The Executive Board kept us regularly, promptly, and comprehensively apprised – both verbally and in writing – about the overall situation of the company, the current business growth, the financial position, the corporate planning and the strategic direction along with all other major projects of the TÜV Rheinland AG Group. In 2016, the Supervisory Board convened three meetings. The work performed by the Supervisory Board's committees (Personnel and Audit Committee) made a significant contribution to the work of the Supervisory Board.

Prof. Dr.-Ing. Johann-Dietrich Wörner, Director General of the European Space Agency (ESA), left the Supervisory Board at the conclusion of the Annual Shareholder's Meeting on April 12, 2016. The Annual Shareholders' Meeting appointed Prof. Dr. Michael Hüther, Director and Member of the Executive Board of the Institut der deutschen Wirtschaft Köln e.V. (Cologne Institute for Economic Research). The Supervisory Board thanks Prof. Dr. Wörner for his trustworthy collaboration.

The auditing firm PricewaterhouseCoopers audited the annual financial statements dated December 31, 2016, including the management report and accounting, prepared by the Executive Board of TÜV Rheinland AG. The audit of the annual financial statements, the management report, and the proposed appropriation of profits produced no objections. The Supervisory Board has adopted the annual financial statements.

On behalf of the entire Supervisory Board, I would like to thank the Executive Board members, managers and all employees for their successful work. I wish TÜV Rheinland AG and all of the Group's companies continued success in overcoming future challenges for the good of society and the company.



Prof. Dr.-Ing. habil. Bruno O. Braun  
Chairman of the Supervisory Board of TÜV Rheinland AG



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# The art of thinking together

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\_\_\_\_\_ Is dialog just one form of communications among many? Or is it the decisive key to fundamental transformation of individuals, groups or even society as a whole?



Technically, a dialog has always been the »discourse and response conducted orally or in written form between two or more persons.« In the 1990s, the American management consultant and research scientist specializing in the study of organizations William Isaacs formulated a much snappier definition: He described dialog as the art, not only of speaking with one another, but rather of thinking together. Shared thinking and – as a direct result – action are absolutely crucial for mastering the major challenges of our time. Twenty years later, this finding holds truer than ever.

TÜV Rheinland, too, is facing major challenges: The digital revolution is bringing radical change not only to politics and societies, but also to the business models of our customers, and yes, even to entire industries. Innovation is proceeding at a tremendous pace. At the same time, globally active companies are increasingly demanding global services from a single source.

What does this mean for us? Firstly, that we at TÜV Rheinland must continue to reconsider, reflect upon and reexamine everything – and that we still need answers to several very fundamental questions, the most important of which is probably this: What is our identity, the binding force of our future action? Together, we have reflected, sketched out, pondered, discarded and heatedly discussed ideas with one another. Would William Isaacs be proud of us? We do not know. What we do know is that there is no reason to distance ourselves from our identity as expressed in our corporate vision: We still aim to be the world's best sustainable and independent service provider for testing, inspection,

certification, consulting, and training. Established by mutual accord and in full awareness that we will have to grow into and with that claim, it is a decision in which we take pride.

What follows? Very simply: Do it. Best! It is with the three-pillar comprehensive program of that name that we have set forth to satisfy both our internal standards and the needs of our customers to the fullest extent possible.

The first pillar: Our Strategy 2020. We want to grow in all of our Business Streams – continuously, sustainably and with reasonable profitability. We will concentrate our investments on three main topics – digitalization, supply chain services and energy/infrastructure – where existing TÜV Rheinland core expertise meets significantly above-average growth prospects. Intensive involvement in the focus topics will be expressed not only in rising numbers, however. It will take business fields which have often heretofore operated in isolation and bring them

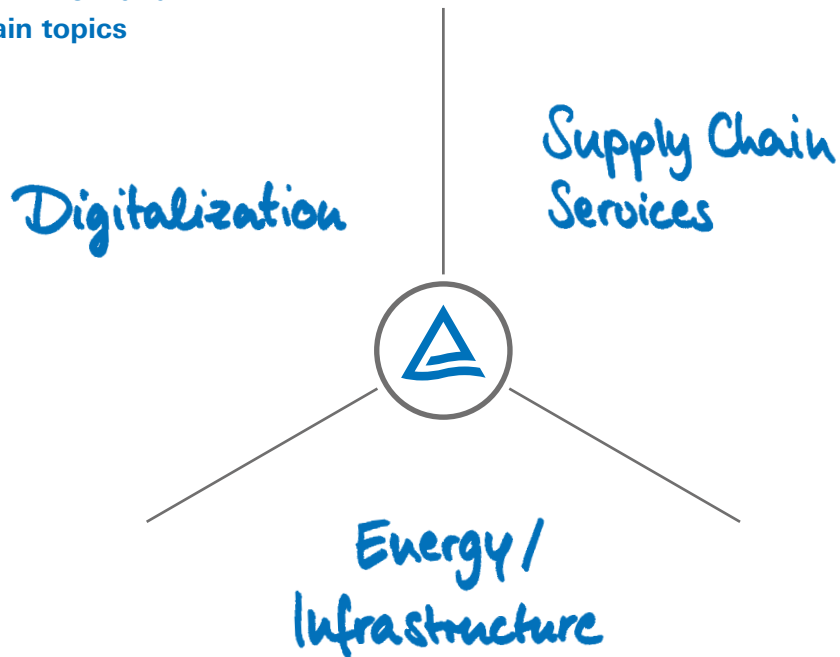
together into interdisciplinary, multinational teams; it will create new forums for the exchange of ideas; and – perfectly in keeping with Isaac’s message – it will develop the art of thinking together.

The second pillar: Profound changes in organization and processes. We have distributed responsibilities differently, adapted reporting channels, redefined the rules of our collaboration – from the very top of the company down to the individual location – and in this way created the conditions for globally standardized and therefore more efficient processes in many areas. With regard to our sales and administrative

»Do it. Best!«

- Our strategy:  
**Grow together**
- Our processes:  
**Improve together**
- Our culture:  
**Change together**

TÜV Rheinland  
Main topics



structures, we have actively sought to compare ourselves with competitors and other leading companies. After all, thinking together also means learning together.

The third pillar: Cultural transformation. Though our goal is quite clear, reorientations of this magnitude touch the level of human emotions. Without the corresponding cultural transformation, change projects risk ending up as mere paper tigers. Accordingly, we want, no, we have to create, in close and continuous dialog with our employees, a shared understanding of the values with which we will move forward.

But that dialog must amount to more than just an entrepreneurial monolog, of course. Beyond »Do it. Best!« lies a far broader horizon, a dissimilarly more complex network of relationships with a wide range of interest groups. Business, politics, science, consumers, media, advocacy groups of every conceivable kind – few companies are as thoroughly networked worldwide as ours is. In this extremely dynamic network, the dialog has to be conducted in all of its facets.

In the one case, we serve as advocates and the driving force, voicing progressive thoughts or admonishments. In the other, we are listeners who critically consider others' thoughts and propositions, while structuring them and enriching them with our own knowledge. Today we have to gather the right clever minds around a table and bundle their expertise for the good cause. Tomorrow, on the other hand, we have to reconcile and reinvigorate a seemingly gridlocked third-party exchange through fresh arguments, solid facts and viable compromise proposals.

Under the roles and functions described here, there is no clear hierarchy, no good or bad. Each serves an important function. In other words: Consciously accepted and assumed according to the given situation, each role, each function, brings TÜV Rheinland a step closer to achieving its business objectives. They are linked together through the unchanging attitude with which we approach them – with integrity, openness, independence and commitment – clear examples of which we will provide later in this Corporate Report.



Several of those examples explicitly illustrate the fact that tremendously powerful new actors are entering the picture as dialog partners: Machines. Equipped with ever more powerful artificial intelligence, they communicate not only with us humans, but also with one another. Self-maintaining power plants, complete IT-controlled industrial value creation chains or medical diagnoses from the main frame computer – keywords such as Industry 4.0 and Big Data allow fantasies to take flight to utopian dreamscapes. Or maybe utopian only at first glance?

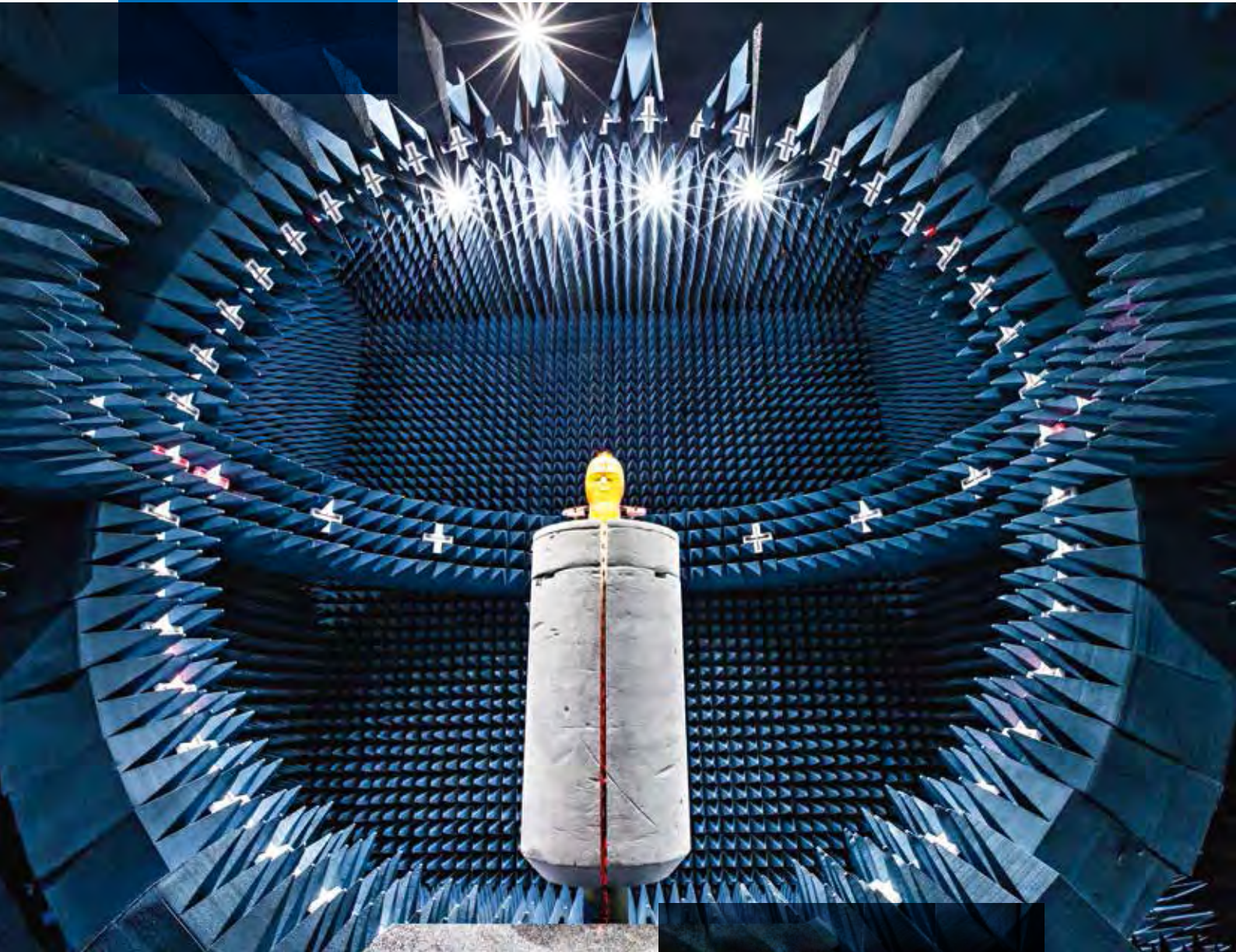
What does that mean for the dialog of the future when humans guided by emotions and values integrate with beings imbued with logic and perfect memory? What happens when machines actually take over the opinion-forming and decision-making process completely? Will dialogs become easier and faster? Will they produce better results? Will they still exist, the advocates, listeners, messengers and mediators – just made of aluminum and glass fiber instead of flesh and blood?

We need no clairvoyant ability to predict that discourse and response conducted orally or in written form between two or more persons will continue to occupy the poets and thinkers of this world as intensively as ever in the future. And something else also seems certain: In much the same way that TÜV Rheinland is doing it right here, dialog as a communication form will continue to change profoundly – but it will always remain an art.





Good or bad vibes? The propagation characteristics of a mobile phone signal can be investigated in the absorber chamber.



Clever minds under one roof: In the new wireless laboratory in Fremont, Sarbjit Shelopal and his team rely on state-of-the-art testing technology.



# WELCOME TO PLANET SMART



A phenomenon known as the »Internet of Things« will change our world as radically as the steam engine or the computer once did. The heart of this revolution is beating – once again – in Silicon Valley. And the TÜV Rheinland Center of Excellence Wireless/IoT team is right there at the forefront.

The car, the television, the Teflon pan. Although most innovations retain their practical value over the course of time, our fascination with them tends to fade. One of the rare exceptions is wireless technology. Speech and data are translated into electromagnetic waves, whirl around the planet at incredible speeds and in unfathomable quantities, find their destination as if guided by an invisible hand, and are then restored there to their original audible and visible state. Well over 100 years since its invention, this process continues to fascinate many people.

In a variety of forms, the »wireless« concept has decisively transformed our world in many ways, and the next revolution is already well underway. It is known as the »Internet of Things.« Whether in factories, in homes, on the street or out in green pastures, studies predict that in 2020 more than 20 billion devices of all kinds will be networked together via wireless internet, uniting about one tenth of the volume of data generated worldwide. »So why didn't this happen any sooner?« one might ask, and not without justification. After all, the wireless internet is not all that new.

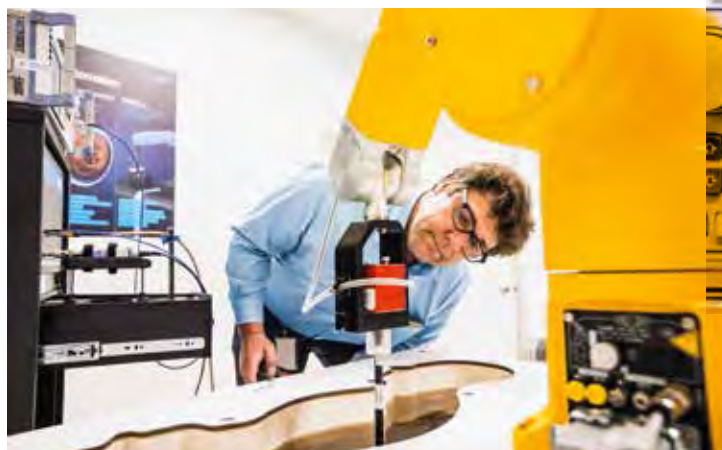
Well ... yes and no.

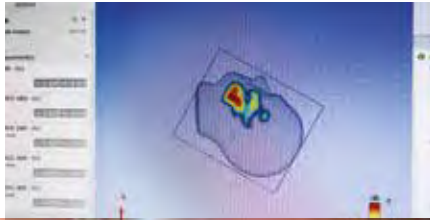
## Not all wireless systems are created equal

Up until now, the world of wireless technologies has been ruled by two dominant formats. On the one side, there is mobile communications with its well-known standards such as UMTS, LTE and 5G. Powerful in terms of range and bandwidth, albeit investment intensive and energy hungry. On the other side, there are short-range wireless networks such as WLAN or Bluetooth: Precise and high-performance, but limited in range to a few meters or the next solid wall. For a long time, the vision of the Internet of Things could not be achieved because there was no format that combined long range with low investment and energy requirements.

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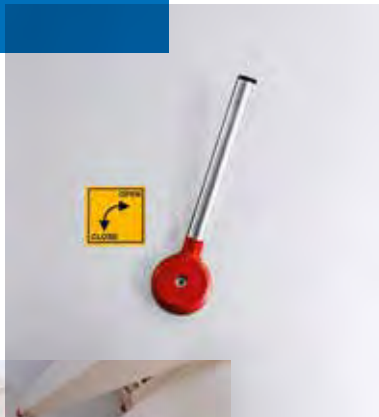
Full dose or gentle radiation? Arndt Stöcker setting up a SAR test system. It measures how much energy a mobile phone radiates to the human body.





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Higher, faster, farther: A super-fast SAR test system and a hall that can even be used to test the electromagnetic compatibility of cars are perfectly suited to the demanding tastes of Silicon Valley customers.



A new technology now fills precisely that market niche: Low-Power Wide-Area Networks. Designed for relatively small volumes of data, they are capable of operating at distances of up to 15 kilometers over open terrain. In enclosed spaces, even solid walls represent no insurmountable barrier. And what about the cost? Only about 10% of the cost of commercially available mobile communication technologies. Application areas? From self-driving vehicles and the remote monitoring of livestock to the fully automated control of industrial production processes – these are just a few of the fairly obvious prospects.

### Pioneers under one roof

It is equally obvious that a market for the relevant testing, inspection and certification services emerges in the slipstream of virtually every technical innovation. In the field of wireless technologies, TÜV Rheinland is considered to be one of the pioneers. The world's first Wi-Fi laboratory was established by the Group, and experts from the Electrical Business Stream also helped Bluetooth technology come of age. Stefan Kischka, Vice President Wireless/IoT at TÜV Rheinland, knows that in the wireless business, those who speak first are generally best served: »The developers of new standards like to form tight-knit communities. So it's important to engage early in the discussion process. Although being part of such a community doesn't necessarily prevent the occasional technological belly flop, at least it ensures that you're right there in the room when a new worldwide standard is established.«

## The developers of new standards like to form tight-knit communities.

It comes as even less of a surprise that the orchestration of the Internet of Things reaches its crescendo where the very roots of digitalization itself run deepest: California's Silicon Valley. From Apple and Google to Tesla, essentially all of the big-name players have offices on the San Francisco Bay – and because even in the wireless world, having a direct connection to the customer plays an absolutely decisive role, TÜV Rheinland has also set up shop in the immediate vicinity. In March 2017, a new 1,100-square-meter laboratory that takes communications and information technology to a whole new level opened in Fremont, California.

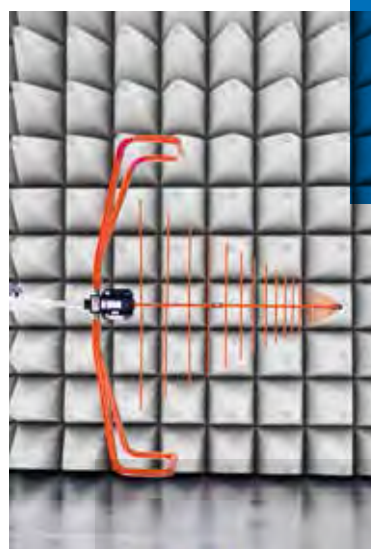




## Faster, faster!

Behind painstakingly secured walls, Arndt Stöcker, Operations Manager Wireless/IoT, and Sarbjit Shelopal, Global Director of the Business Stream, work with an experienced team, mainly on ultramodern testing technology. Stöcker's pride and joy is a new device for frequency testing of equipment such as mobile phones. »This system lets us shorten individual frequency tests from the usual 30 minutes to 10 seconds. Now go ahead and calculate just how much time that saves with over 1,000 frequencies to be tested.« In Silicon Valley, time is the undisputed scarcest commodity, confirms Shelopal. »When push comes to shove, the laboratory stays open for our customers day and night. Developers can just drop by here with their prototypes, rather than having to send them halfway around the world for testing as they did in the past.«

Another persuasive argument for TÜV Rheinland: Comprehensive knowledge about many products that have been successively struck by the smartification wave. The passenger car-compatible dimensions of the absorber chamber also point to one of the particularly intensively targeted audiences. »Knowing how a car works is by no means a liability here,« understates Stöcker with reference to the topic of self-driving vehicles, which is also red hot in Silicon Valley. He and his team know that they have plenty to offer to the major players of Silicon Valley – enough to fascinate them for a long time to come.



Familiar faces and esteemed colleagues: Gary Jorgenson and Josie Sabado are two of the wireless experts on the TÜV Rheinland team with extensive contacts throughout the area.





Whether soft, crease resistant or breathable, many valued properties of textiles are attributable to the use of chemicals in the manufacturing process.



## WHEN TOXICITY GOES OUT OF FASHION

More choice, higher performance and lower prices – the global textile industry can barely meet customers' high demands without resorting to the use of polluting chemicals. A strict withdrawal program aims to change that. In the thick of it: The detox specialists from TÜV Rheinland.

Click! It is dark. Quiet. Soft fabric caresses the skin and spreads comforting warmth. Its subtle scent evokes a florid summer meadow. At the end of a hard day, what is better than laying your tired head on freshly washed cotton, silk or microfibers?

Very few people know that in this relaxing moment their skin comes in contact with a richly varied mixture of chemical materials. In many modern clothing, shoes and household textiles, even the fibers themselves are pure synthetics. Color, touch, and other welcome properties such as crease resistance or breathability – all of these are attributable to the specifically targeted use of chemicals. During the course of production, even simple, industrially manufactured textile products come into direct or indirect contact with over 100 different chemicals. In the finished product, they are, as a general rule, safe for people. During use and later disposal of the textiles, however, they can cause very serious harm to the environment.





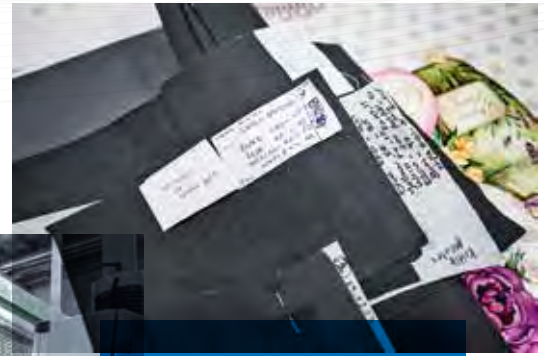


Tradition meets future:  
Along with classic silk  
screen printing, the Turkish  
company Zorluteks also  
uses state-of-the-art digital  
technology in the produc-  
tion of its home textiles.



## In Dialog

—When toxicity goes out of fashion



Right this way! Mutlu Sezen of Zorluteks relies on the support of TÜV Rheinland in order to find the right path through the detox jungle for his company.



As a diplomat for eco-friendly textile production, Rakesh Vazirani maintains contacts with industry, trade and NGOs the world over.

## In 2020, the party's over!

In 2011, environmental protection activists from Greenpeace found horrifying levels of pollution from textile companies in Chinese rivers – including synthetic dyes, heavy metals and other pollutants. That marked the birth of the Greenpeace DETOX campaign. Its objective: To eliminate all harmful chemicals from the production of textiles and shoes by 2020. Meanwhile, nearly 80 brands have undertaken to achieve that goal, including industry giants such as Inditex (Zara), H&M and Adidas.

DETOX – short for »detoxification« – is not the only initiative to which a more sustainable textile production has committed itself, however. Some of the top dogs include the Sustainable Apparel Coalition, the German Partnership for Sustainable Textiles and the »Zero Discharge of Hazardous Chemicals« (ZDHC) program. According to estimates, these three industrial associations together represent about one third of the global textile market. But having so many people apparently striving for the same goal does not necessarily make things easier.



Partners who see eye to eye: With valid facts and arguments, the TÜV Rheinland Detox team under the direction of Mohammed Dkhissi represents the interests of the manufacturers in dealings with Greenpeace and other environmental protection groups.



## Spoiled for choice

»For us as textile manufacturers, all these different initiatives at the moment are rather confusing,« observes Mutlu Sezen, Product Development Manager for Zorluteks. The company based in Lüleburgaz, Turkey, is one of Europe's prime addresses for home textiles such as bed linens or draperies. About 53 percent of its production is dedicated to contract manufacturing for major international customers, and the rest is marketed through three successful house brands. »Each initiative defines its own targets and milestones, while specific customers also set their own individual standards. But we cannot satisfy all of the requirements simultaneously. No manufacturer can. So what is the best path for us to take?«

**We cannot satisfy  
all of the requirements  
simultaneously.  
No manufacturer can.**

An interdisciplinary team from TÜV Rheinland led by Mohammed Dkhissi, Global Field Manager Softlines, has the answers to this question. »Although we are also an active member of the ZDHC program, we decided to develop our own, coherent detox concept at TÜV Rheinland.« Since July 2015, specialists from three Business Streams – Products, Systems and Academy & Lifecare – have been working together to review the use of chemicals in all steps of the complex value-added chains of textile companies, advise and train their employees with regard to the correct handling of those chemicals or their eco-friendlier alternatives, and conduct audits to monitor the change processes initiated. »The

big advantage of our approach is that instead of being bound to specific standards, we can work with each customer individually to develop a customized solution that is tailored to their initial situation and needs.« The image of the tailor in the world of textile mass production appeals to Rakesh Vazirani, who is the Hong Kong-based project manager of a team distributed across several continents which develops the strategy and establishes important contacts to industry, trade and NGOs.

## Looking for the common denominator

Vazirani takes a rather different view of the various initiatives linked to DETOX: »We all support the objectives of the campaign, but unfortunately the exchange of ideas and information with the manufacturers was given short shrift during the concept phase. In order to survive in the global markets, textiles have to satisfy more and more demanding quality standards. As things stand today, this can only be achieved at the expense of the environment – with impregnations, for example. The changes that the industry aims to implement take time, and above all, structure. In this respect, the communication is not functioning perfectly yet – there are just no clear, consistent messages regarding requirements and solution approaches.« That is why regular contact with customers, industrial associations and the NGO is so important. Vazirani tries to explain and communicate, firmly convinced that there is a common denominator for all who actually want the same thing.



# BATTEN DOWN THE HATCHES

In the era of Industry 4.0, the operators of critical infrastructures and complex production networks have to redefine the term »safety.« With its new Security by Design concept, TÜV Rheinland helps protect physical and virtual points of entry against criminal attacks.



For a long time, the world of functional safety in industrial plants and processes was a peaceable one. By no means complacent, but serene. Engineers identified risks like the risk of overpressure in a pipe and calmly developed solutions – a safety valve to discharge overpressure, for example – and could be relatively certain that their solutions would work reliably, oftentimes even for decades. From the perspective of the company operating the plant, however, there was a fly in the ointment: Serenity more often than not meant inefficiency.

In the networking of plants and their control systems through information technology in the 1990s, process engineering found what appeared to be the Holy Grail for attaining

maximum utilization and optimum efficiency. Suddenly plants could be run under steady control at the limits of their operating range, increasing competitiveness and margins. But this progress did not come without a price, because each new network connection opened another potential point of access for individuals with malevolent intentions. The serene world of functional safety had opened the plant gates to the fast-paced, unpredictable, chaotic world of cyber criminality.

## The best of two worlds

According to recent studies, about one third of all operating malfunctions in industrial plants today are already attributable to cyber attacks. When things go well, those malfunctions cost only money. When things go badly, they can cost human lives. »The need to review current security strategies in industry on a regular basis and to develop intelligent concepts will continue to grow with the ongoing expansion of networking in the Industrial Internet of Things,« says Nigel Stanley, cyber security specialist at TÜV Rheinland, with conviction. »Cyber security is a fundamental success factor: To safeguard central supply systems, as a basic requirement for functional safety in manufacturing processes, for the secure automated exchange of data between networked production systems, and to ensure the availability and failsafe reliability of production operations.«





Combined experience: Stefan Ditting, Heinz Gall and Jürgen Hölzel (from left to right) are a seasoned, experienced team when it comes to meeting demanding new safety standards.



Flagship cabinet meeting: HIMax, the world's most powerful safety system, has also been certified by TÜV Rheinland.





»With the advent of Industry 4.0, functional safety can no longer be viewed in isolation,« confirms Heinz Gall, Stanley’s counterpart at TÜV Rheinland’s Industrial Services Business Stream. »Security by Design« is the name of their shared concept – the best of two TÜV Rheinland worlds. This integrated offering for functional safety and cyber security combines TÜV Rheinland’s 145 years of industrial safety expertise with its more than 15 years of experience in IT security. It addresses the concerns of component manufacturers and system integrators of industrial control systems in particular. Because the old rule applies also in this case: The most effective way to deal with risk is to begin at its root. Once a plant starts operation, security gaps can be eliminated only at great expense – if at all.

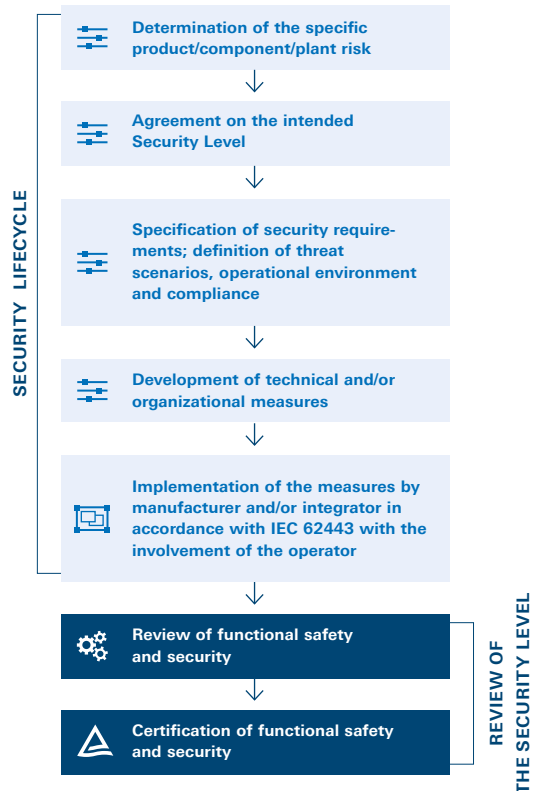
## With the advent of Industry 4.0, functional safety can no longer be viewed in isolation.

### Milestones »Made in Germany«

Based in Brühl, in the Baden region of Germany, HIMA is one of the world’s premier addresses for security-oriented automation solutions. As a component manufacturer, HIMA falls within the core target group of »Security by Design.« Whether temperatures, pressures or flow rates, products from HIMA use sophisticated sensor technology to keep a watchful eye on even the most remote corners of a plant at all times and sound the alarm immediately whenever even the slightest deviations from previously defined guide or limit values occur. The customer list of these safety pros reads like a Who’s Who of the global process industry. For its part, HIMA has figured on TÜV Rheinland’s customer list for nearly 50 years now. In 1970 the two partners set a milestone for the entire industry with the world’s first TÜV-certified safety system. For more than 25 years, Heinz Gall has supported HIMA in certification processes as a regular visitor to Brühl, which remains HIMA’s sole production location worldwide. This longstanding partnership is based on mutual respect and trust between the people involved. The regular intensive exchange with TÜV Rheinland experts is almost more beneficial to us than the actual certifications, says Stefan Ditting, Product Manager at HIMA, as he describes the longstanding collaboration with succinct candor.

### Security by Design

IDEAL WORKFLOW FOR DEVELOPERS AND OPERATORS OF INDUSTRIAL PRODUCTS, COMPONENTS AND SYSTEMS ACCORDING TO IEC 62443



Even in the field of cyber security, good old documentation on paper is not completely obsolete.

These days that exchange revolves primarily around a numerical figure that means nothing at all to the average lay person: 62443. Behind that number lurks the comparatively new series of international standards concerning »IT Security for Industrial Process Measurement and Control – Network and System Security.« Or in somewhat more down-to-earth language: An effective concept against unwanted external attacks into the plant control system. IEC 62443 defines, among other things, the requirements that component manufacturers like HIMA should meet when developing products. This includes user authentication required for access to the plant control system, for example, or the elimination of unnecessary data streams. These very requirements also then serve as the basis for certification testing and inspection. With TÜV Rheinland's »Security by Design« approach, even the most demanding safety levels defined in IEC 62443 are no insurmountable obstacles. And HIMA, too, foresaw precisely those levels. In close collaboration with TÜV Rheinland, the foundation for the next milestone has already been laid.



What's new in the land of standards and regulations? Where are the most pressing technical issues? First and foremost, certification means listening to one another.







Pioneering product under stress test: In testing laboratories world-wide, TÜV Rheinland experts such as Romica Kieseewetter and Matthias Baumann put power storage units of all types to the test.





Some never make it though: Within the framework of a certification process, the test methods range from rustic to sophisticated and also demand manual skill of the testing engineers.



## PLENTY OF JUICE

Modern batteries are – for many reasons – among the greatest causes for hope in the battle against climate change. Before they can realize their full potential in actual practice, however, they must undergo a demanding certification process – in a very special »torture chamber« at TÜV Rheinland, for example.

No, they were never especially cherished products, those good old disposable dry cell batteries. You installed them in alarm clocks, flashlights and Walkmans, and just then when the need was most urgent, you could fully rely on them – being flat. Recharge them? With those so-called »primary cells,« that was not possible. In about the mid-1990s, lithium-ion-based rechargeable batteries fought back and achieved initial social recognition: Their major advantage was that they not only were more flexible by design, but also could be recharged up to 1,000 times – and with virtually no trace whatsoever of the troublesome »memory effect.« The term refers to the creeping loss of capacity that rapidly battered the reputation of their nickel-cadmium-based predecessors. Things suddenly became possible. Sitting in the park with your laptop, for example, or using a cell phone. In its contemporary interpretation, the good old dry cell battery celebrated an impressive comeback.

### From primary to revolutionary

Today, energy storage systems are viewed as one of the key technologies we need in order to meet one of the greatest social challenges of our time: climate change. Basically, in the context of the global energy transition, a big problem remains: The naturally fluctuating production of renewable energy and the equally fluctuating energy requirements of industry, trade and private households can be synchronized only to a limited extent. Oftentimes what we do not consume immediately is simply discarded and never used at all. The vastly more intelligent prospect for the future: What we do not consume immediately will be transferred to rechargeable batteries – as a buffer stock for whenever green electricity production falls off. Solar power users will be the first to tell you about their daily struggle with this phenomenon.



A touch of Fort Knox in Franconia: During battery overvoltage tests, hefty explosions have been known to occur.



— 22

Another application area with tremendous future potential is climate-friendly mobility. Until very recently, the demand for electric cars – much to the chagrin of policymakers – still suffered severely from purportedly insufficient horsepower and range. Vehicles of the latest generation, however, now promise impressive values in this regard. But it is precisely the users' continuous call for more power – and smaller, lighter and less expensive, if you please – that carries considerable hidden risk.

**More energy in a smaller space inevitably means higher risk potential.**

### Places of suffering

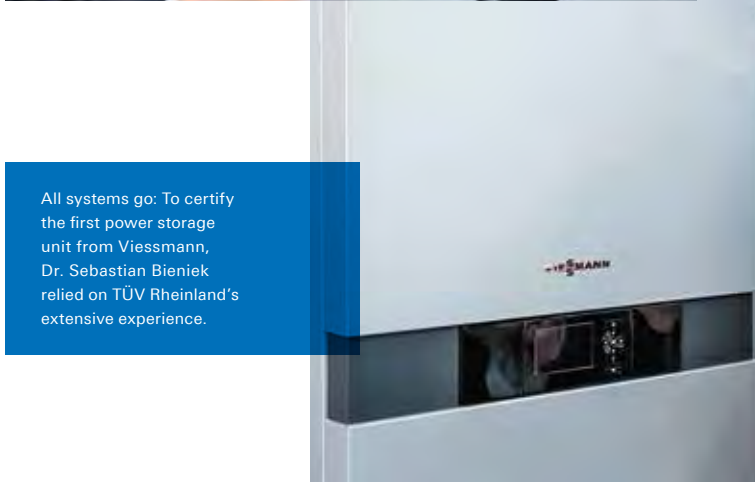
»Due to market pressures – and ultimately that means us, the consumers – manufacturers are producing lithium-ion batteries with higher and higher energy densities,« explains Matthias Baumann, Head of the TÜV Rheinland Battery Testing Laboratory in Nuremberg, Germany. »But more energy in a smaller space inevitably means higher risk potential.« And identifying those risk potentials before a new battery makes it to the market is precisely what Baumann and his team do day in and day out. In the laboratory in Nuremberg, a panoply of test stands are lined up one after the other. Most of them

appear relatively harmless to the average lay person at first glance. For the batteries undergoing certification testing, however, each test stand is a place of suffering. The torture plan features weeks and weeks of charging and discharging, intentional overvoltage conditions, thermal shocks, and physical strength trials.

»Basically there are two big problems with lithium-ion batteries,« adds Romica Kiesewetter, Testing Engineer on Baumann's team. »One is the problem of overcharging. After that, the battery is already damaged. The other is the problem of extreme temperatures, to which a battery might be exposed during transport, for example. In both cases, structures can form in the battery in a way that causes short circuits to occur inside – and in the worst case, those short circuits can then cause a fire.« Kiesewetter's statement is relatively diplomatic here, inasmuch as she and her colleagues have already witnessed hefty explosions in the context of their testing.







All systems go: To certify the first power storage unit from Viessmann, Dr. Sebastian Bieniek relied on TÜV Rheinland's extensive experience.

### Successful debut

The battery modules in the new Vitocharge power storage unit from Viessmann have exhibited no such shortcomings – much to the satisfaction of Dr. Sebastian Bieniek, Head of Battery Technology and Power Electronics at the well-known manufacturer of heaters, industrial energy systems and cooling solutions. »Though the topic of batteries is not completely new to our company, we did have to find the answers to a few questions. So we're glad that we found TÜV Rheinland as an experienced partner to certify our modules. Over the course of the certification process, we learned a great deal.«

With Vitocharge, the Allendorf-based company is expanding its portfolio of full-service solutions. In spring of 2017, the storage unit will begin storing electrical power from Viessmann photovoltaic modules and combined heat and power units in single- and multi-family homes as well as businesses, thereby achieving overall efficiencies of up to 90 percent. The course set for this successful debut was also charted to no small degree in the »torture chamber« in Nuremberg.



Corporate  
Social  
Responsibility

A decorative graphic at the bottom of the page consisting of a series of thin, parallel, wavy lines that create a sense of movement and depth, transitioning from a dark blue background to a lighter blue background.

26 \_\_\_\_\_ CSR Management

32 \_\_\_\_\_ Compliance

36 \_\_\_\_\_ Employees

46 \_\_\_\_\_ Environment

52 \_\_\_\_\_ Society

## CSR MANAGEMENT

### SYMBOL OF INTEGRITY AND SOLIDARITY

As a global service provider in the areas of testing, inspection, certification, consulting, and training, we are directly involved in value creation processes throughout the world in many different ways. And we feel good about that role: after all, it opens up myriad opportunities to shape our world in terms of sustainable development – through the implementation of the global energy transition, for example, or in connection with the inexorable digitalization of all aspects of life, or in the development of future-proof mobility concepts. But rights also generally give rise to obligations. Day in and day out, with competence and dedication, our 20,000 employees meet their serious responsibility to people, environment and technology.

We consider the distinguished reputation of the company and of the TÜV Rheinland brand as our most valuable corporate asset and as the foundation of our business success. Accordingly, protecting our brand also remains a top priority within the framework of our »Strategy 2020.« The TÜV Rheinland name will continue to stand for the highest standards of integrity and solidity the world over in the future as well – and credible, sustainable action makes a very essential contribution to that end.

In the year under review, we publicly declared our commitment to the ten principles of the UN Global Compact (UNGC) once again. With their clear positions on human rights and labor standards, the preservation and sustainable protection of the environment as well as combating corruption, they represent an essential guide for each and every one of our employees. In this context, we feel that it is important to communicate the message that even small contributions can add up over time to effect considerable change. By the very nature of our business model, we cannot have a strong direct impact in all areas covered by the UNGC. That's why we have been actively supporting the German Global Compact Network (DGCN) for several years now in its efforts to promote even greater awareness for UN Global Compact principles in the overall sphere of business life. We are also playing an active role in the promotion of UNGC principles in other countries as well.

In 2016, for example, our CSR officers in South Africa and India attended DGCN-organized seminars on human rights in the supply chain.

Another global field of action we want to support in the future relates to the Sustainable Development Goals (SDGs) of the United Nations. Those goals mark the first time that the international community of states has agreed on common goals covering all three dimensions of sustainability: economics, ecology and social issues. As a first step, in the year under review, our CSR managers identified which of TÜV's services and processes contribute to the SDGs. On the one hand, the results were encouraging: in 12 of the 17 goals, we found points in common with our business. This now leaves us spoiled for choice, however: which goals should be the focus of our targeted engagement in the future? It is precisely this question that we intend to answer across all departments over the course of 2017.

### OUR SUSTAINABILITY STRATEGY – PRECISE AND AMBITIOUS

In our mission statement, we formulated an ambitious goal: TÜV Rheinland aims to be the world's best sustainable and independent service provider for testing, inspection, certification, consulting, and training. Day in and day out, our sustainability strategy brings us substantially closer to achieving that goal. It is reviewed on a regular basis, ensuring that it concentrates on the most important issues at all times – both from our own internal perspective and for our stakeholders.

We consider stakeholders to be all persons, companies and institutions with whom we enter into a direct relationship in the course of providing services, as well as those indirectly affected by our business activities. Sustainable action also means, in no small measure, transparent action. That's why we feel so strongly about the importance of giving all our stakeholders a clear picture of who we are, how we work, what we test and inspect, and who monitors our work.



## Customers

- \_ Service quality
- \_ Service delivery
- \_ Fulfillment of contractual requirements
- \_ Increasingly demanding CSR and compliance requirements in tenders

## Business partners / suppliers

- \_ Clear specifications and contracts
- \_ Fast and fair payment
- \_ Good reputation

## Media representatives

- \_ Transparency
- \_ Reliability
- \_ Adherence to the safety and quality claim

## Non-governmental organizations / networks

- Support of and participation in initiatives
- \_ Transparency
- \_ Neutrality
- \_ Fulfillment of societal expectations and compliance with ethical standards

## Science / research

- \_ Exchange of knowledge and experience

## Employees

- \_ Safe work environment
- \_ Development opportunities
- \_ Reasonable working hours and appropriate remuneration
- \_ Work-life balance
- \_ Integrity/compliance

## State-owned companies / governments

- \_ Implementation and compliance with statutory regulations

Key stakeholder groups and their expectations of TÜV Rheinland



We value our staff

We act with integrity

**COMPLIANCE**

- \_ Ensure an effective compliance management system



**OCCUPATIONAL HEALTH AND SAFETY**

- \_ Reduce work accidents



**DIVERSITY**

- \_ Further internationalize top management
- \_ Increase share in female executives
- \_ Promote a diverse corporate culture

**20%**

International members of the Group Executive Council

**15%**

Women in executive positions

 together survey:  
Equal opportunities > RACER benchmark average

**The sustainability strategy's key areas of activity**

Target year: 2020



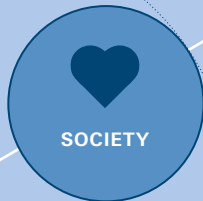
We are reliable

**SERVICE STANDARDS**

- \_ Systematic stakeholder engagement
- \_ Ensure a uniform approach towards service responsibility

**0.1%**

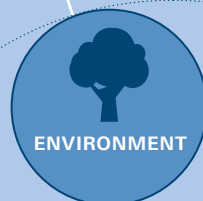
of EBIT as donation budget



**CHARITABLE COMMITMENT**

- \_ Support for charitable projects

We give back



**CO<sub>2</sub> EMISSIONS**

- \_ Reduce corporate CO<sub>2</sub> emissions per employee

**-20%**

Energy consumption per employee (reference year 2010)

**ENERGY CONSUMPTION**

- \_ Reduce corporate energy consumption per employee

**-25%**

CO<sub>2</sub> emissions per employee (reference year 2010)

We act consciously

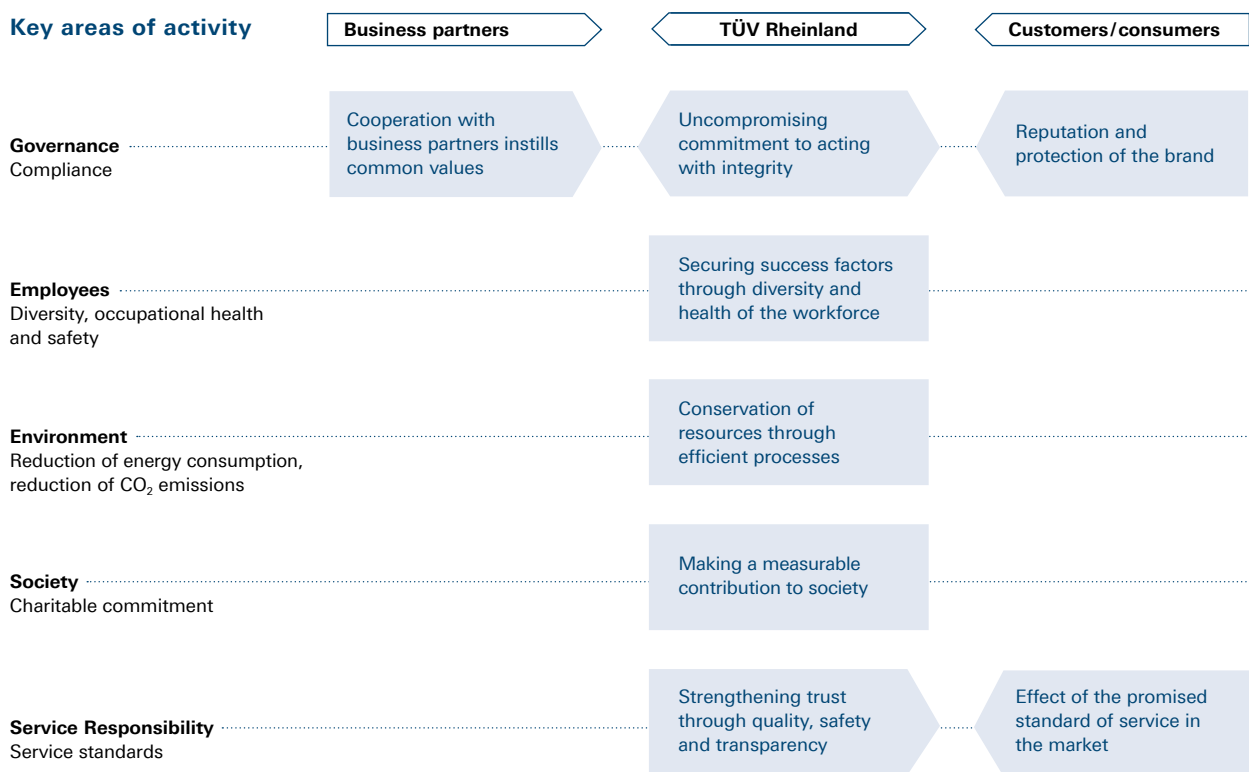
For the purposes of communicating regularly with our stakeholders, we use a broad spectrum of tools and channels. That dialog is the crucial element which enables us to evaluate and prioritize both the stakeholder groups and their respective concerns with regard to their significance for TÜV Rheinland. The findings gleaned from this process are incorporated into a systematic materiality analysis, which we last conducted in 2015 and used as the basis for revising our sustainability strategy.

Our sustainability strategy spans the five dimensions of governance, employees, environment, society and service responsibility. Within those dimensions, we have defined concrete fields of action and, where appropriate, formulated quantitative objectives against which we want to, and will, be measured in coming years.

Through the materiality analysis and the subsequent in-depth discussion at the executive board level, the entire top management of TÜV Rheinland was involved in the strategy process. After careful review, the Supervisory Board also approved our sustainability strategy. That means all important bodies are united behind the sustainable path of TÜV Rheinland and share the same ambitions.

The following sections of this Corporate Report explain in detail how we are transposing our sustainability strategy into concrete measures and initiatives.

CONNECTIONS BETWEEN KEY AREAS OF ACTIVITY AND THE BUSINESS MODEL





We prefer to forgo  
a business opportunity  
than risk damaging  
our brand.

|  
Dr. Michael Fübi

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## SOMETIMES LESS IS MORE

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TÜV Rheinland's offering includes some 2,000 services. Do they truly satisfy all our own high standards and meet the expectations that people associate with the TÜV Rheinland brand? This is a valid question, and one that we have been systematically studying since mid-2016 whenever irregularities or doubts arise relative to a given service – with the »Brand Risk Evaluator« that we developed specifically for that purpose. The service is evaluated to determine if it carries risks for our brand – because it conflicts with our corporate values, for example, or might mislead the consumer, or appeals to unsavory customers. If the service does turn out to be problematic, it must be modified accordingly or its days in our portfolio are numbered. Moreover, services classified as medium or high risk must always be approved by the top management.

When we screened all of the some 400 services for which we grant test marks, 15 services were identified as cases for the Brand Risk Evaluator in the year under review. As a result, we then halted the certification of website functionality, for example; there was a large discrepancy here between our actual service, which was limited to purely functional aspects, and the far broader interpretation of the test mark by consumers.

And from now on, every new service – whereby we also treat existing services as new ones when introducing them into another industry or region – will also be scrutinized by the Brand Risk Evaluator prior to market launch.

## WHERE THE ACTION IS

At TÜV Rheinland, CSR and sustainability have been under the purview of the newly created Corporate Development department since 2016. As a result, our organizational structure now also acknowledges a tendency which, for all intents and purposes, had already long since become an accepted fact: Sustainability is an essential pillar of TÜV Rheinland's corporate strategy. Our Global Officer CSR continues to report directly to the Chairman of the Executive Board of Management. As a central control center, our CSR team formulates, communicates and monitors our sustainability strategy. From Cologne, it initiates and manages all corporate CSR-related projects – comprising both internal and external activities.

The team receives strong support from an extensive network of regional and local CSR officers. The latter transpose the corporate guidelines into the respective culture and provide feedback about local and department-specific activities. We believe that it is very important that all officers have the opportunity to exchange experience with one another regularly so they can always share relevant information and best practices on a timely basis.

Another important task concerns reporting our CSR activities to the outside. The main instrument for that purpose is our annually published Corporate Report. In the interest of maintaining the greatest possible credibility and transparency, we have an external auditing firm validate the statements and data on sustainability published therein, which currently follow the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative. Moreover, the Corporate Report fulfills our reporting obligations with regard to the UN Global Compact.

## MEMBERSHIPS AND NETWORKS

Although they compete against one another in many places, the providers of inspection services traditionally maintain an intensive exchange. This extends from the global to the local level. We, too, are actively involved in the different associations working to create shared standards, objectives and solutions for our industry:

- The International Federation of Inspection Agencies (IFIA) sets worldwide standards for the entire sector as the umbrella organization of global testing service providers. Our membership enables us to maintain strong industry-specific links to ethical and compliance-related topics and forms the framework of our compliance management system. As one of the five largest members, we are represented on the Executive Board and in almost all expert groups.
- The most important European association for our industry is the CEOC (International Confederation of Inspection and Certification Organisations). It represents the interests of its members vis-à-vis the European Union as well as all European and international associations and organizations that deal with standards, norms, and accreditation. We are represented on the Executive Board of the CEOC by one Member of the Executive Board of Management. Other employees of TÜV Rheinland take an active part in various expert committees of the organization.
- The German technical inspection associations have, in turn, joined together to form the TÜV Association (VdTÜV), which ensures that their interests are represented at the national level. TÜV Rheinland is also represented in the Executive Committee here by a Member of the Executive Board of Management.
- Furthermore, TÜV Rheinland is a member of the TÜV Markenverbund e.V. association, an alliance of technical inspection associations, which has set for itself the primary objective of protecting and maintaining the value and the reputation of the TÜV brand.

In connection with our strategic areas of activity, there are also numerous projects and initiatives in which we work together with other companies and political or societal actors to support sustainable values in general and to overcome very concrete challenges. The following chapters provide some examples of these.

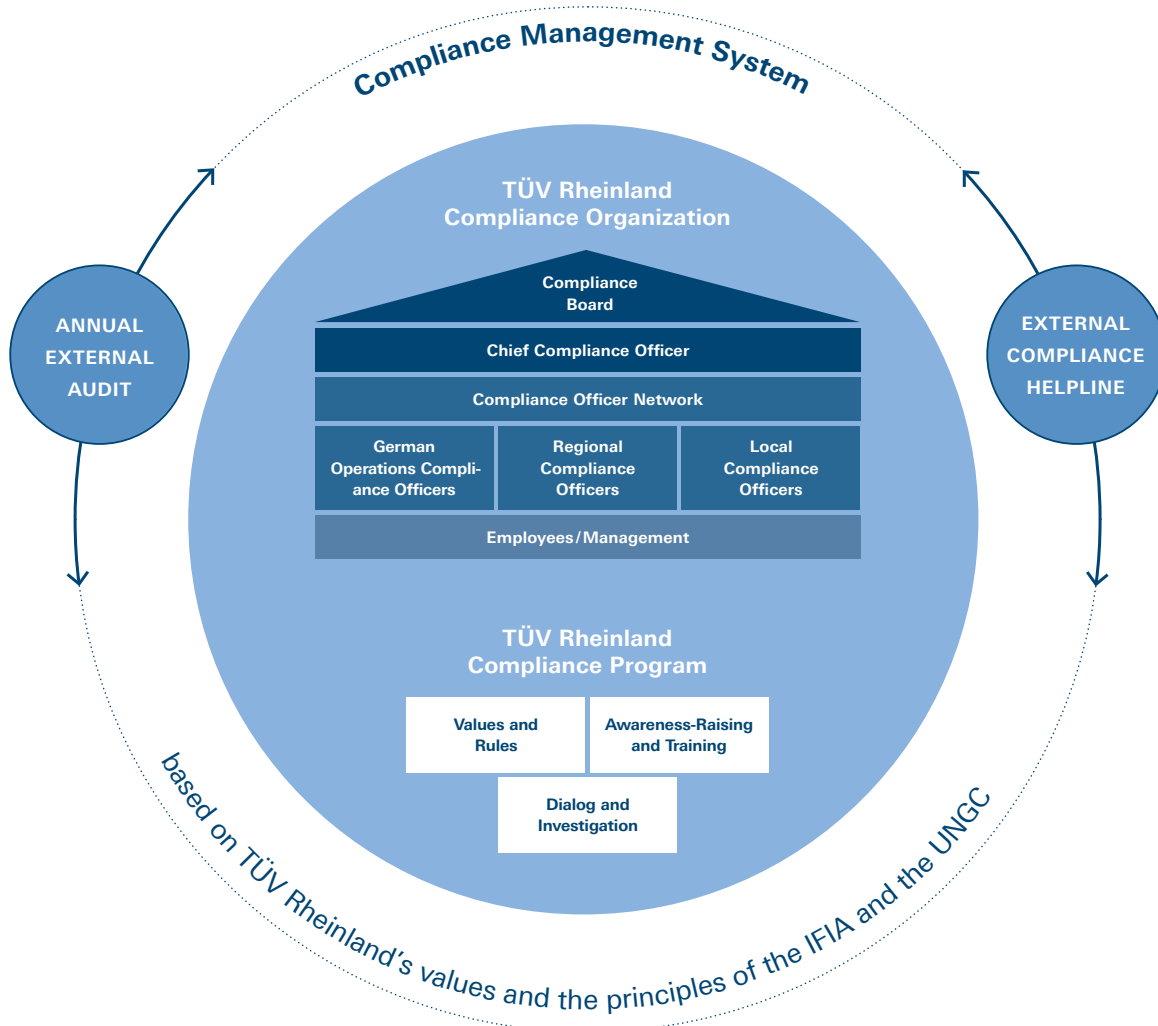
# COMPLIANCE

Compliance is essential for a globally active testing and inspection service provider such as TÜV Rheinland. Across our full spectrum of services, our customers and business partners expect integrity, trust, safety and objectivity from us. To our way of thinking, compliance means that corporate management and the workforce always act in accordance with statutory regulations, in-house requirements, and voluntary commitments. Once per year the general managers of all of our subsidiaries as well as managers worldwide must explicitly confirm that they have operated in accordance with our compliance

program and reported any violations to the responsible compliance officer.

Our daily compliance work is based on the principles of the IFIA (International Federation of Inspection Agencies) and the UN Global Compact. In this process, we are guided by the values anchored in our principles: integrity, excellence, customer-orientation, performance and agility. We use our corporate compliance management system to help achieve that overarching vision.

## COMPLIANCE MANAGEMENT SYSTEM





## TÜV RHEINLAND COMPLIANCE ORGANIZATION

The Chief Compliance Officer heads our compliance organization from the Corporate Compliance department. He reports directly to the Chairman of the Board of Management of TÜV Rheinland AG but acts independently in that function. The highest decision-making body for compliance issues within the Group is the Compliance Board. In regular meetings, it makes decisions concerning the further development of our compliance management system along with decisions concerning specific compliance incidents and any measures to be derived from them. The Compliance Board comprises the full Board of Management of TÜV Rheinland AG, the Chairman of the Supervisory Board, an employee representative and the Chief Compliance Officer. In addition, the Chairman of the Board of Management and the Chief Financial Officer meet regularly with the Chief Compliance Officer and the Head of Internal Audit. In those meetings, they report on the work in their two areas and coordinate relevant decisions. We have established an active worldwide compliance network currently comprising 66 Compliance Officers. Besides full-time Compliance Officers in the corporate department and in some regions, our employees can also approach competent contacts for compliance issues at the local level in their subsidiaries. In order to ensure continuous exchange within the network, we have established a monthly exchange of experience on a virtual platform, during which current topics and issues are discussed.

Another important part of our compliance organization is the risk management function, which is managed from corporate headquarters. The Chief Compliance Officer is a member of the corporate risk management unit, in which the areas of Controlling, Internal Audit, Quality Management and Finance are represented along with the Legal department. The Corporate Compliance Office also works very closely with Internal Audit. Compliance issues form an integral part of Internal Audit's current list of audit items. This helps to ensure that compliance requirements which apply throughout the Group are also implemented on a local basis.

## TÜV RHEINLAND COMPLIANCE PROGRAM

Our compliance program comprises, among other things, several guidelines which apply throughout the Group. The most important binding compliance documents are:

- Code of Conduct of TÜV Rheinland
- Compliance Guidelines
- Guideline for the Prevention of Conflicts of Interest and Corruption
- Guideline on Donations and Sponsoring

Our employees have access to all of the documents listed here via the intranet, where they are always available in English and German, and in some cases also in other languages. Whenever new employees join the company in Germany, we immediately inform them about the relevant compliance documents. The same requirements apply abroad. For interested business partners and third parties, we have published the Code of Conduct and a compliance information sheet on the internet.

In order to ensure that all employees understand the importance of compliance, we have established a compulsory e-learning program throughout the Group. During the year under review, we updated that program. It is available to all employees in English and German and contains updated subject matter. In 2016, a total of 2,582 employees worldwide successfully completed the e-learning course for the first time. All together, more than 23,000 employees have received this training since the roll-out of the course. Along with the Group-wide training seminar on the Code of Conduct of TÜV Rheinland, during the year under review, the Corporate Compliance department also developed additional specific training programs for all employees. Those e-learning courses cover compliance management systems, anti-corruption and how to handle invitations and gifts, as well as conflicts of interest. The crucial importance of compliance for our company and the associated organization are also, together with the Group-wide CSR management function, the subjects of the two-day orientation seminar entitled »New at TÜV Rheinland,« which all newly hired employees in Germany can attend. Our Compliance Officers also conduct comparable classroom training courses on specific topics and local regulations in other countries and regions (e.g. in Brazil, Poland and China). In their daily work, they make a key contribution to anchoring compliance in the minds of our employees.

Before entering into business relationships with TÜV Rheinland, suppliers must acknowledge our general purchasing terms and conditions. In so doing, the suppliers agree to adhere to applicable laws and regulations. Moreover, suppliers in Germany also agree to adhere to the principles of the UN Global Compact in the areas of human rights, labor standards, environmental protection, and anti-corruption measures. In 2015, in our first business partner analysis, we took an important step toward sustainable supplier management. That analysis showed that subcontractors – including external auditors and service providers, for example – represent the group of greatest significance for TÜV Rheinland by far. Since those partners directly support the performance of our services, we expect them to be equally committed to the values of integrity and of employee safety and health as we ourselves are. That is why, as announced, we focused more intently on our subcontractors and their compliance risks in 2016. On an ad hoc basis, we also conducted our compulsory compliance training courses for subcontractors, for example in the Asia-Pacific region and in the Netherlands. At present we are developing a worldwide compulsory approach, which will be used to classify our business partners and – depending on the specific risk profile – assign the appropriate compliance measures to them.

In addition, there is a »Blacklist of Countries« at the corporate level, which serves as a guideline for all business activities of TÜV Rheinland by classifying countries according to certain risk groups. Those guidelines prohibit business activities in certain countries and collaboration with certain companies without explicit authorization of the corresponding management level. Business activities in countries with unpredictable risks are generally prohibited. The purpose of this classification is to protect our employees and to reduce risks. The blacklist is updated on a regular basis in order to account for current political and economic developments in our business activity. Using an up-to-date, independent database, we also check applicable sanctions lists before we engage in business activities in certain countries or with certain customers.

Despite all preventive measures, we cannot completely exclude the possibility that TÜV Rheinland might violate compliance or at least come under suspicion of such a violation. In the event of any compliance violations, we always react with the requisite consistency and resolve. The procedure here follows a standardized process which is likewise transparently specified in a guideline that applies throughout the Group. Within the scope of that guideline, we reserve the right to take legal action – under both criminal and labor law – in case of employee misconduct. Once again in 2016, no fines or government sanctions were levied against any companies of the TÜV Rheinland Group for non-compliance with laws and regulations.

In the year under review, the worldwide compliance officer network processed a total of 326 compliance issues. Corporate Compliance handled 125 of those issues.

The queries submitted to us involved the following topics in particular:

- Acceptance of invitations and gifts
- Establishment of business relations abroad
- Declaration of Commitment to Compliance
- Personnel issues

The cases of suspected misconduct involving criminal law subject to review by the Corporate Compliance Office could be classified mainly into the following thematic areas:

- Corruption/bribery
- Fraud
- Forgery of documents

The majority of compliance cases are reported to the responsible compliance office by the employees directly. In addition, there is a compliance helpline available to all employees, to which they can turn – also anonymously if they so wish – when they would like to notify the company of misconduct. The helpline is staffed by a law firm which has offices all over the world and is obliged to maintain confidentiality.

Compliance is also an important element in the acquisition and integration of companies into the TÜV Rheinland Group. We supported five M&A projects from a compliance perspective, for example, and conducted compliance due diligence prior to the acquisition of companies for TÜV Rheinland. It is our intention that the companies to be integrated will implement the compliance program of TÜV Rheinland and explain the compulsory compliance program to their employees.

### **ANNUAL EXTERNAL COMPLIANCE AUDIT**

Since 2009, our compliance management system has been audited annually at several locations by an external auditor. Along with two subsidiaries of the TÜV Rheinland Group in Germany, in 2016 we had the compliance management system of our foreign subsidiary in the United Arab Emirates audited. The requirements of that audit follow IFIA guidelines (so-called Agreed Upon Procedures), and the results are also reported to the IFIA. Moreover, we apply the recommendations issued by the auditing firm commissioned to perform the audit, in order to continuously improve our compliance management system.

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### **COMPLIANCE OBJECTIVES**

We intend to further develop our compliance management system again in 2017, of course. In this context, we will be focusing particular attention on the topic of business partners and on the compliance officer network. We want to further expand the latter and provide it with additional resources.



## EMPLOYEES

### STRIVING FOR EXCELLENCE

As a global provider of testing and inspection services, our most important product is expertise. Producing and marketing this expertise worldwide would be impossible without experts – employees who apply their know-how, integrity and dedication every day toward the achievement of a shared goal: becoming the world's best sustainable and independent service provider for testing, inspection, certification, consulting, and training. We realize that we can achieve this ambitious goal only if each and every one of us lives our shared values, understands the strategies that we are pursuing, and is also willing to make the necessary changes. Simply put, our success depends on our employees.

In 2016, with the launch of our »Do it. Best!« campaign, we initiated a Group-wide change process designed to raise our internal performance standards even higher and meet the needs of our customers even better in the future. We realize that successfully lived change can only occur when it is understood and supported by everyone concerned. And that is why Do it. Best! builds not only on the implementation of our Strategy 2020 and organizational changes within the framework of Excellence@TÜV Rheinland, but also on a transformation of our corporate culture and our leadership style.

In a Group such as TÜV Rheinland, which has already been undergoing dynamic change for many years now, it is virtually impossible to avoid a certain »patchwork« effect sooner or later. Important elements of our culture date from different time periods, and were marked by different business situations and leadership figures. Based on a shared understanding of our path forward, we re-synchronized precisely those elements in shaping a new »Culture Framework« in the year under review. It encompasses our mission statement, our shared values, the leadership essentials and the competency model. Consistently implementing and living the Culture Framework are now at the top of our agenda for 2017. Specifically, we expect this to generate a more strategically oriented corporate culture and a shared vision of our organizational and personnel development, as well as greatest possible discipline in what we think, say and do overall.

From our employee survey »together,« which is explained in greater detail below, we also learned that the leadership principles we reformulated in 2015 have yet to become fully anchored in the everyday life of the company. Here, too, the Culture Framework will help us rapidly eliminate the identified deficiencies – in the form of condensed, and thereby clearer, leadership essentials as well as through last year's conceptual revision of the manager development tools. It was encouraging to note that the presumably most important element of our corporate culture remains entirely intact: the strong degree to which our employees identify with TÜV Rheinland and their sense of pride about working for our company.

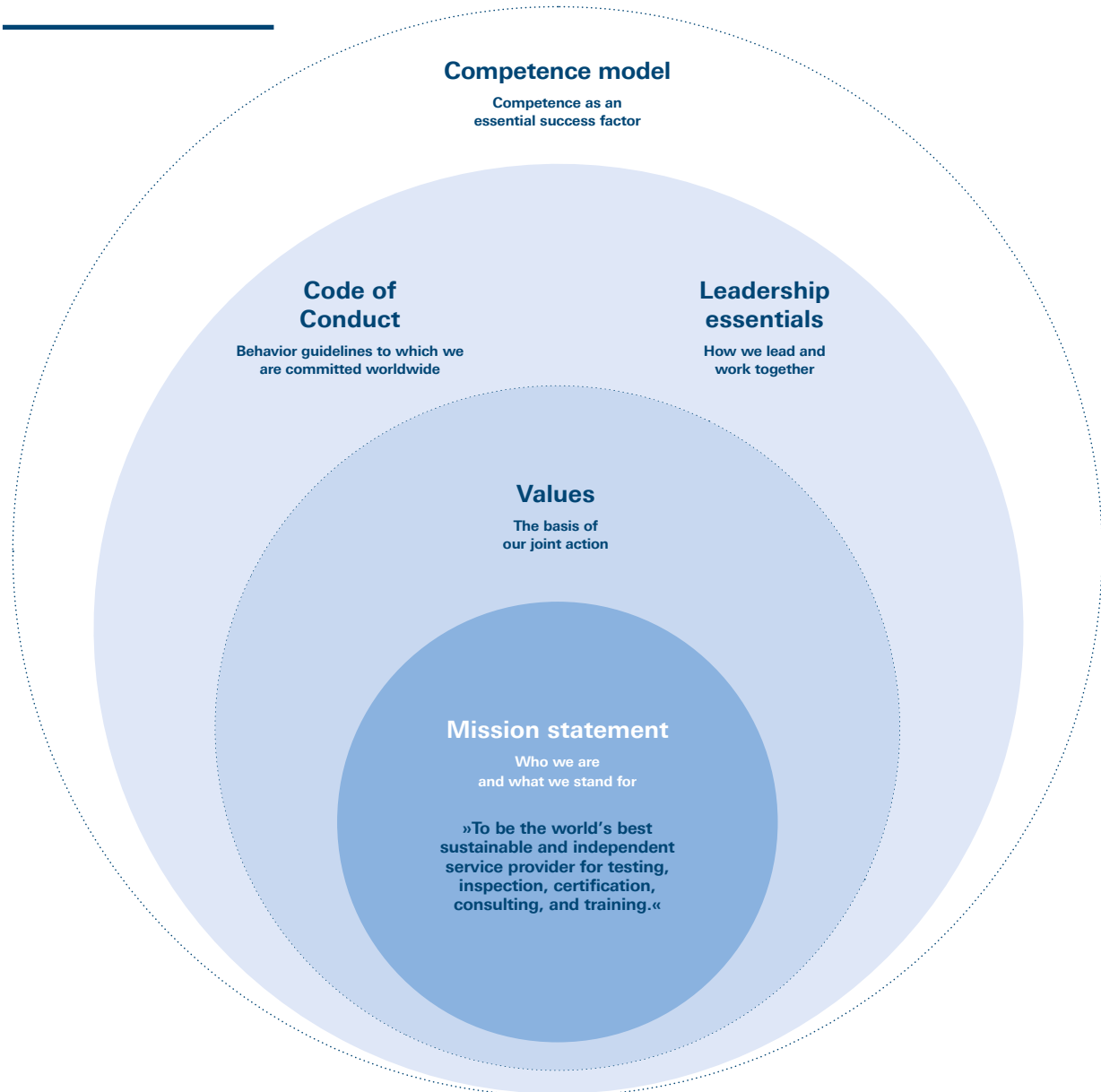
But beyond those highly topical issues, in the future we also want to focus even more attention on the two fields of action defined in our sustainability strategy: diversity as well as occupational health and safety. It is here, with a view toward the long-term requirements of our business, that we see the greatest opportunities to develop TÜV Rheinland into an even more successful and future-proof company.

#### Strong opinions wanted

With such a large-scale change process, we naturally consider certain basic elements as essential: knowing our employees' viewpoints and expectations – and possibly also their fears – taking them into account to the greatest possible extent in our strategic deliberations, and incorporating them into the change process. The key to successful change lies in successful communication. Perfectly in keeping with our corporate culture of transparency and openness, we promote interaction that reinforces the ability to give and take criticism and that expects everyone to be prepared to engage in constructive dialog. Giving and receiving feedback are both a right and a duty for all – absolutely irrespective of hierarchical positions.

One key feedback tool is our global employee survey »together,« which we have been conducting anonymously at two-year intervals since 2011. We use it to examine »evergreen« topics such as work processes, leadership culture or customer focus, while time and again also taking new aspects of our work and corporate world into consideration. Questions about physical stress in the workplace, for example, found their way into the questionnaire for the first time in the third round, which began in November 2015. We compare the findings from »together« with the

## OUR NEW CULTURE FRAMEWORK



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other members of the so-called RACER Group. It comprises twelve globally active German corporations that regularly exchange and benchmark information from employee surveys, including Daimler, Bosch, BASF and Evonik.

The good news: nearly 71% of our workforce took part in the survey in 2015, which means that the participation rate has risen continuously since 2011. The equally good news: a high participation rate generates meaningful results – and therefore reliable findings. In overall satisfaction, we reached 3.7 out of 5 points. That makes the current result slightly below the value of the previous survey (3.8). Without the supplemental questions about physical stress, the result would have been unchanged.

A large majority of our employees indicated that they are proud to work for TÜV Rheinland. This important sign of our employees' commitment also has a positive effect on our corporate image. When our employees believe in the quality of TÜV Rheinland, our customers feel it too. There were also good grades for work-life balance. Many of those surveyed, on the other hand, judged the quality of feedback from their supervisors unfavorably. Our employees also still see room for improvement in the organization of procedures.

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 AWARDS IN 2016
 

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According to the annual survey of the market research firm Universum Communications, TÜV Rheinland continues to be one of the most attractive employers for engineers in Germany. On the popularity scale determined by nearly 8,000 university graduates, we ranked among the Top 100 once again in 2016.

For the ninth time already, the CRF Institute of the Netherlands recognized us as one of the pioneers in exemplary personnel management. As a result, TÜV Rheinland continues to be listed among the Top Employers in Germany.

The employer branding consulting firm CSR jobs & companies presented us with the »CSR Jobs Award 2016« in the category »Our Values.« Many companies from various industries sent in their projects for employees in response to the call for submissions for the title of »Employer with Responsibility.«

In 2016, we took part in the »Investor in Human Capital« competition in Poland for the first time and immediately joined the ranks of the prize winners. The evaluation was based on the findings of our most recent »together« employee survey.

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Cause for celebration:  
 Andy Fuchs, Personnel  
 Marketing Team Manager  
 at TÜV Rheinland, with  
 Katharina Schmitt, Editor  
 for "Personalmagazin"  
 and member of the jury  
 in the »Our values«  
 category.





The impressive figure of some 1,800 measures initiated – ranging from the level of individual local teams to Group-wide initiatives – shows just how seriously we take the opinions, and especially the criticisms, voiced by our employees. But 1,800 measures also first have to be processed using a structured methodology. The new online platform »together Action Planner« helps us do exactly that. For one thing, our managers can use it to call up and analyze the survey results of relevance to them much faster than before. Moreover, the HR developers in all of the regions can now more easily follow which measures the teams are planning and/or see how much progress they have already made. So in sum, the Action Planner does a significantly better job of depicting the impact that »together« is actually having – and not least among the expected results. Our employees will also clearly see positive changes in their respective work environment.

## DIVERSITY

### Variety breeds success

People from more than 90 nations work on behalf of TÜV Rheinland on every continent around the globe. At first glance then, we are already an extraordinarily diverse company. We live an open and appreciative corporate culture, to which we have also made a public commitment, not least with the signature of the Diversity Charter in Germany, France, Italy and Spain.

Nevertheless, we are convinced that we have yet to exploit the full potential of a diverse global team. This explains why diversity plays such a prominent role in our sustainability strategy. Specifically, by 2020 we aim to

- staff 20% of our top management positions with people from outside of Germany,
- raise the share of women in management positions to 15% and
- achieve an above-average score in the RACER benchmark in the area of equality in our employee survey »together.«

Both the strategic development and the operative implementation of actions and instruments are the responsibility of our HR Development & Diversity department (HRD & D), the head of which – the Global Officer HRD & D – reports directly to the Chief Human Resources Officer. As human resources interface and the hub for all questions and concerns – regarding women and career, for example, or work and family, or cultural diversity – the HRD & D department has considerably raised the profile of diversity issues in the Group over the past few years.

### Stimulating action, opening prospects

Our broad range of projects, activities and workshops specifically designed to support women at TÜV Rheinland are bundled within the function »Women & Career.«

On the occasion of International Women's Day on March 8, 2016, we hosted a worldwide live chat with our Chief Human Resources Officer, Thomas Biedermann, for the first time. Specifically intended for our female employees, the two-hour chat explored ideas for the advancement of equality and the promotion of women in the company and enabled participants to submit many valuable suggestions directly to the highest office. In Germany, we had already held a forum enabling employees to exchange experience and ideas with the Chief Human Resources Officer by phone or in person on International Women's Day every year since 2012.

Fast becoming a familiar tradition, the third annual »TÜV Mentoring Program for Future Female Specialists and Managers« – better known as TAFF – began in April 2016. In 16 tandem teams, experienced managers supported ambitious female employees in their professional and personal development over the course of a year. The regular one-on-one discussions between mentor and mentee were rounded out by experience exchange meetings and workshops on topics such as communication, self and time management, or resilience. In this way, TAFF helps attract and prepare women for specialist and management careers at TÜV Rheinland.

Within the framework of our collaboration with the European Women's Management Development (EWMD) international network, highlights included a well-attended discussion event held in Cologne, Germany, under the banner »Changing leadership – how does that work on a part-time basis?« After a guided tour of our in-house kindergarten, female representatives of well-known companies reported about their experience as leaders working part-time and took questions from visitors. In other countries such as Turkey or Spain, female employees of TÜV Rheinland joined the EWMD and participated in regional networking events.

Our international regions are also addressing the topic of women and career with a wide range of measures and activities. To mark International Women's Day, for example, employees at all of our Indian locations made a public commitment to actively support equality in the company. In South Africa, we encourage women to participate in our HR development programs in order to prepare them for management positions.

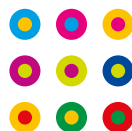
In joining the »Chefsache« initiative, which works to achieve a balanced ratio of women and men in leadership positions, we also strengthened inter-company exchange. The initiative was started in 2015 by organizations from the worlds of business, science, public administration, and the media. Its name is a German word indicating top priority and literally means: »a matter for the boss.« It currently has 16 members – including many large, well-known corporations – reaching nearly one million employees in all. In addition, the members of the initiative seek out exchange with figures from business and society as well as academia and with institutions in order to raise awareness about equal opportunity for women and men.

In celebration of the fourth German Diversity Day, we also participated in an event sponsored by the Rhein-Ruhr Diversity Network entitled »Vielfalt statt Einfall – Kulturelle Kompetenz für wirtschaftlichen Erfolg« (»Diversity beats narrow-mindedness – cultural competence for business success«).

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## A STRONG SIGNAL AGAINST DISCRIMINATION

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## charta der vielfalt

**UNTERZEICHNET**

In signing the Diversity Charter, TÜV Rheinland aims to promote diversity in the company as well as to eliminate prejudice and discrimination. In connection with this, we are also working in close collaboration with interested employees to focus more attention on lesbian, gay, bisexual and transgender (LGBT) concerns. Since the end of 2015, for example, the LGBT »Stammtisch« (or regulars' table) has held a number of informal meetings at the Cologne location, primarily as a forum to exchange experience with other LGBT colleagues.

In addition, the Stammtisch members are committed to promoting visibility and open-mindedness in the company with regard to this topic. One important step in that direction was the election of official contacts in November 2016. They advise our employees on LGBT-related issues at TÜV Rheinland and support network-building as well as the implementation of projects. In addition, they maintain regular contact with both the HR Development & Diversity department and the Chief Human Resources Officer.

## A TEST MARK WITH DEPTH



The current German labor market is a textbook case of a bull market. Highly qualified job seekers have the impression that they are free to choose whatever job they wish. Personnel managers in many industries, on the other hand, have to fight to fill open positions adequately. Now, for a change, both sides have cause to celebrate – thanks to the TÜV Rheinland test mark for outstanding employers. Small and medium-sized companies, in particular, find that it helps raise their profile as attractive employers. Potential applicants, in turn, use it for guidance in their job search, because it reveals just how well a company's personnel department stacks up.

### Excellence is flexible

Education, professional life, retirement – established over the course of many decades, this remarkably predictable life model is less and less appropriate for the modern work world. Employees increasingly expect their employers to create flexible conditions that make it possible to combine everyday professional obligations with parental leave and voluntary extended leaves of absence, volunteer work and support for relatives in need of special care. So for companies confronted with this new reality, living the principles of diversity also means developing a whole new level of intellectual and organizational flexibility relative to their employees' different phases and models of life. At TÜV Rheinland, this starts right with our new values and principles, is reflected in administrative details such as highly varied models for working hours as well as forms of team organization, and can even be found in the arrangement and furnishing of our facilities.

For this certification, we defined clear requirements that must be met by the human resources management of the company in question. In an on-site audit, our experts review all personnel department processes as well as topics such as training, career development, organization and corporate culture. Additional modules can examine specific topics in greater depth, such as parent-friendliness, digital work safety, performance as a company that provides training, or integration services for foreign professionals.

But there are already some 200 employer quality seals in Germany alone: Does the world really need yet another one? We think so! Because unlike those of the »competition,« our test mark's criteria are transparent and clearly comprehensible at all times. Anyone who wants to know the precise details need only enter the individual number from the employer's TÜV Rheinland test mark into our online certification database [www.certipedia.com](http://www.certipedia.com).

TÜV Rheinland i-sec GmbH, the cyber security expert in the TÜV Rheinland Group, provides a clear, concrete example: Many IT security consultants sooner or later experience a growing desire for routine schedules and fewer nights in hotel beds. In the past, we were often hard pressed to offer those deserving employees such prospects at TÜV Rheinland. An innovative job model, for which we are currently seeking a suitable candidate, might change that in the future. Within the framework of a pilot project, this employee will receive comprehensive training as a security consultant. As he travels to well-known customers to work on exciting projects during his on-the-job training, he will learn about the industry and acquire extensive expertise. A wide-ranging selection of internal and external qualification programs, participation in international symposiums, and flexible working hours are all part of the package as well, of course. As the pilot project draws to a close, the employee will be able to decide,



together with his supervisor, whether he will remain with TÜV Rheinland, supporting his customers from the office or – if possible – from his home office, or accept permanent employment with the customer. In both cases, travel is minimized and life becomes easier to plan again. With this model we clearly have no guarantee of ultimately retaining a proven employee. On the other hand, we are convinced that during the project term we can provide him with so many good arguments to continue his career with us that changing employers will be out of the question.

Speaking of good arguments, obviously we should not neglect to mention »TÜVtel Kids,« our first company daycare center in our headquarters in Cologne. Today it is already completely »booked up« with 40 children, 23 of whom are under the age of three. In 2016, we enriched the pedagogical concept through a collaboration with TÜV Rheinland's Pensioners' Association. Former employees helped the children plant flower beds outside the daycare center and read stories to them.

Actively and with the requisite foresight, we are also involved in the sensitive topic of »caring for family members.« Especially in Germany, we have to expect that over the long term, many more employees will exercise their legal right to take leave to care for loved ones. For this reason, within the framework of a pilot project, two German locations now have specially trained employees – our »care pilots« – to serve as the first point of contact for all care-related questions. In the medium term, we plan to expand this program to other locations.

We continue to address demographic change with high-quality vocational training for young people. And in this context we place particular emphasis on production-oriented professions, where we expect to see the greatest shortage of specialists in the future. A detailed description of how we coordinate our training activities with our support for refugees can be found on page 53 of this Corporate Report.

Similarly, we also continuously adapt our lifelong learning offerings to the requirements of our business. During the year under review, for example, we established a partnership with IESE Business School, one of the world's leading management schools. Within the framework of this partnership, not only can we use IESE's continuing education program and facilities in Barcelona, New York, Sao Paulo and Shanghai, but we also have access to a database with the résumés of all participants of IESE's MBA programs and its research department.

## OCCUPATIONAL HEALTH AND SAFETY

### We give more for considerably less

Our first and foremost responsibility as an employer is to create working conditions that enable each and every employee to do their job safely at all times. We are firmly convinced that preventive action, as a matter of principle, makes it possible to avoid on-the-job accidents. This is why, within the framework of our sustainability strategy, we aim to significantly reduce the number of on-the-job accidents in the Group.

In 2016, we successfully completed the establishment of a Group-wide occupational safety reporting system. Along with our two key performance indicators for work safety – incident rate and lost workday rate – now we also track so-called »prevention KPIs.« They include, for example, the instruction rate as well as the number of work safety audits and work safety committee meetings. Our chain of communication also includes the Board of Management, which is informed monthly about all accidents that require medical treatment or result in lost workdays. Upon identification of any severe injury or illness which results in a hospital stay of more than 24 hours, an amputation, a permanent disfigurement, unconsciousness or death, or which could result in death, the Board of Management is contacted immediately.

The improved reporting system is a supporting pillar of our new occupational health and safety concept, which was adopted by the Board of Management in September 2016 as part of our fully revised QHSE policy (QHSE = Quality, Health, Safety and Environment). Along with a clearer assignment of roles and responsibilities, our new HSE manual published in December also defines, among other things, the minimum requirements for safety training, which apply for all employees worldwide.

We also made progress in the Asia-Pacific region with regard to furnishing our laboratories for the so-called 5S method supplemented by work safety considerations (5S+1). The basic idea behind this approach is to ensure the continuous improvement of the work environment. Along with organizing an efficient workflow, this also entails placing particular importance on work safety. By the end of 2016, the methodology had been incorporated with at least satisfactory results at nearly 80% of the workplaces. At our Japanese locations, we are already using qualified laboratory inspection tours («Gemba walks») to ensure our employees' continuous work safety awareness.

#### OCCUPATIONAL SAFETY GERMANY

in terms of reportable accidents\*

	2015	2016
Number of employees covered in %	100	100
Reportable accidents	135	181
Reportable accidents per 1,000 employees	14.6	21.8
Lost workdays per 1,000 employees	315.8	346.1

\*Absence of more than 3 calendar days, including commuting accidents.

The number of reportable accidents increased during the year under review. In September and in the winter months with a higher incidence of commuting accidents, slipping and falls, particular emphasis is placed on weather-related factors. In the current year, we will analyze the data to determine whether this trend persists.

#### Little strokes fell great oaks

But accidents are not the only thing that represents a health risk for our employees. And whereas a cut or pulled ligament heals relatively quickly, lack of a balanced diet, lack of physical activity, or too much stress can considerably impair performance for a very long time.

That is why the most important goal of our occupational health management program is to offer our employees a continuous stream of new thought-provoking ideas and assistance for a healthier lifestyle in every respect. Under the banner «Start.Fit,» we follow a three-step approach: We combine information and precautionary measures with movement and fitness offerings as well as suggestions for healthy nutrition.

## A WEBSITE AGAINST SILENCE

The numbers are terrifying: Some 1.3 million people in Germany are alcoholics. Alcohol abuse affects about 2 million others. Unfortunately, many of those affected, and many of their relatives, find it difficult to speak openly about the problem or to accept help. With our »Addiction Prevention Teamsite,« we offer a point of contact for everyone who is looking for general information about addiction or who has very real reasons to be concerned about a colleague or employee who might be affected. Visitors to the website not only will find initial advice to help deal with the situation, but also can get in touch with the regional contacts responsible for addiction issues at TÜV Rheinland.

Following a successful start at our pilot location in Cologne in 2013, we expanded the program to other German subsidiaries in 2015. Unfortunately, the course offerings to date have not generated enough resonance at all locations to justify implementation. Since we all know that even little strokes fell great oaks, however, we will continue our tenacious attempts to persuade employees also at those locations.

Our two-month virtual walking contest which ended in early November, on the other hand, was very well received. In all, 458 employees organized into 67 teams took 321,206,447 steps, thereby circumnavigating the Earth the equivalent of 6.4 times. Along with that, we gained good experience during the two Health Days that we held in Cologne and Berlin in the context of our cooperation with the »Techniker Krankenkasse« health insurance fund.

At our locations outside of Germany as well, health protection and preventive healthcare are very high on our priority list. For example, we offer our employees in Korea, Vietnam and Bangladesh an annual medical check-up free of charge. Moreover, our Korean subsidiary demonstrates just how well health protection and social engagement can be linked together: The neck and shoulder muscles of our employees there are kneaded into shape monthly by visually impaired masseurs. At each of our two Japanese locations, Yokohama and Osaka, we even employ a visually impaired masseur under permanent contract.

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## RAISING COLORFUL FLAGS

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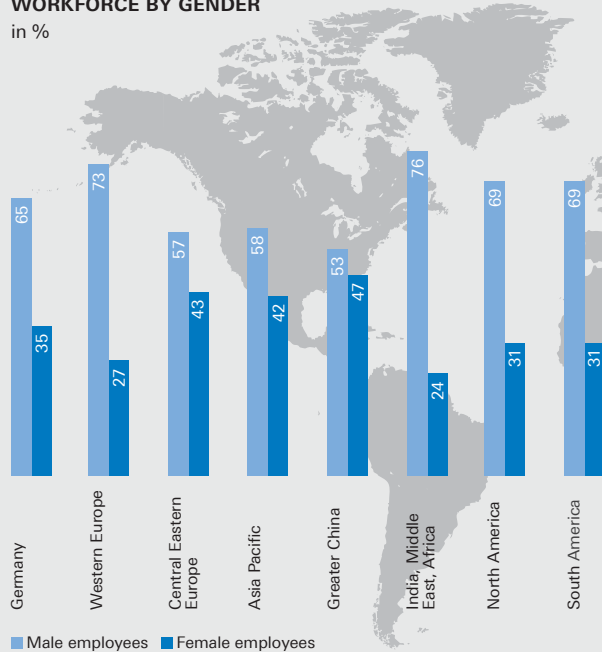
When educating people about the importance of cancer prevention measures, naive, cheerful means can also be effective: In October and November 2016, our employees in Brazil showed how it is done. Dress code: pink or blue – this was the motto for the full month each time. While breast cancer care was the focus during pink October, the prevention of prostate cancer was highlighted during blue November.



# KEY EMPLOYEE DATA\*

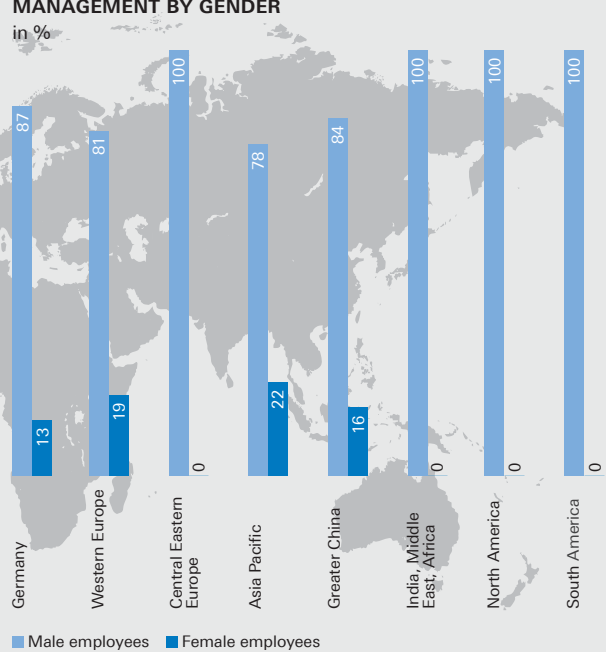
## WORKFORCE BY GENDER

in %



## MANAGEMENT BY GENDER

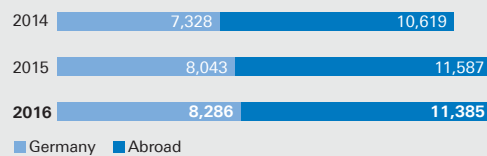
in %



The majority of our workforce is male, 36% of the Group's employees are female. The share of full-time employees is over 91%. Throughout the Group, we employ people from at least 91 countries. 18% of our management positions are internationally-staffed\*\*.

Across the Group, 12.3% of all management-level positions were held by women. This corresponds to a 12.8% share of women in management positions according to headcounts.

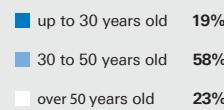
## EMPLOYEES IN GERMANY AND ABROAD



Over the course of 2016, we employed an average of 19,671 people (previous year: 19,630). The number of our employees therefore remained largely constant.

## AGE DISTRIBUTION OF TOTAL WORKFORCE

per capita



Most of the employees (nearly 60%) are between 30 and 50 years of age, with that age bracket constituting 51% of the workforce in Germany and 61% of the workforce outside of Germany.

## EMPLOYEE TURNOVER (GROUP)\*\*\*

in %/per capita



## EMPLOYEE TURNOVER (GERMANY)

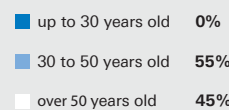
in %/per capita



With regard to departures from throughout the Group, 62% of those who left were men and 38% were women. The increase in the number of employees leaving the company is primarily attributable to the re-organization measures completed in 2016.

## AGE DISTRIBUTION OF MANAGEMENT

per capita



The age breakdown of the workforce is mirrored at the management level. Most of the managers are between 30 and 50 years old.

## DOCUMENTED TRAINING AND FURTHER EDUCATION DAYS IN GERMANY

	2015	2016
<b>Trained employees</b>	<b>4,534</b>	<b>4,494</b>
Training days for new experts	7,719	8,302
Seminar days for new employees	1,290	960
Advanced training days	14,334	15,254
<b>Total training and further education days</b>	<b>23,343</b>	<b>24,516</b>

The chart shows data reported for 2016 which was registered within the Group by February 10, 2017. The training and further education days do not include e-learning programs.

\* All employee data are based on full-time equivalent cutoff date figures (12/31/2016). Deviations from this practice are stated in the text. The data collected covers over 90% of the total.

\*\* »International« here means »non-German.«

\*\*\* Two companies in the Group region South America, which are essentially involved in project business, were omitted from the calculation of the Group turnover rate. The unadjusted turnover rate is 15.3%.



## ENVIRONMENT

### EFFECTIVE IN TWO DIMENSIONS

In our sustainability strategy, environmental protection and resource efficiency play a major role – and each does so in two dimensions.

Within the Group, we are constantly looking for ways to minimize the negative environmental impact of our operations and to maximize the efficiency of our business and management processes in that regard. Moreover, we provide significant leverage for positive impact through the large number of services we offer that are focused on environmental protection and resource conservation: In a close dialog with partners from the domains of science, politics, civil society, and industry, we apply our extensive technological knowledge the world over to develop solutions that minimize environmental problems or, in the best case, even banish them from the world once and for all.

In 2016, with the publication of our new Quality, Health, Safety and Environment Policy at TÜV Rheinland, we achieved a milestone on the way to establishing a comprehensive quality and HSE management system (HSE = Health, Safety and Environment). Possibly the most significant change ushered in by the new policy is that the primary responsibility for its implementation lies with our managers and no longer with the HSE specialists. This means that now all managers are directly responsible for the health and safety of their employees as well as for the minimization of environmental pollution in their respective areas of responsibility. A comprehensive new HSE manual provides the specific details concerning the areas covered under the policy. It describes roles and responsibilities for all management levels, the HSE officers and the employees. In addition, it contains all requirements relative to our HSE key processes.

We aim to continuously raise the quality and coverage of the environmental data we collect. We achieved significant progress during the year under review with the introduction of a new software solution called the

### DISTINGUISHED IN EVERY SENSE



TÜV Rheinland is committed to responsible consumption and sustainable production worldwide, also within the framework of the SCP (Sustainable Consumption and Production) initiative of the United Nations Environment Programme (UNEP). With our »Green Product« test mark, we created a label that embodies precisely that claim. Since its launch in 2012, only products which have been certified according to our comprehensive Green Product certification criteria may carry it. On the test bench, a whole series of important environmental and sustainability aspects are examined – ranging from energy efficiency and climate footprint to ingredients and recyclability. In 2016, our test mark itself obtained two significant certifications:

In November, the Global Ecolabelling Network (GEN) granted it the coveted GENICES certificate (Global Ecolabelling Network Internationally Coordinated Ecolabelling System). This had been preceded by a comprehensive audit of our quality management system for the test mark according to 15 criteria specified by several ISO standards. The GENICES certification paves the way for building a worldwide network of partners for the mutual recognition of eco-labels. In December, after conducting a thorough expert assessment, the U.S. Environmental Protection Agency (EPA), in turn, added our test mark to the list of recommended eco-labels for government procurement projects in the United States.



»EtQ Sustainability Module.« It has enabled us to record environmental data for our international locations and the German business activities in a standardized format for the first time. As of the 2016 balance sheet date, data recording coverage was about 77%.

Most TÜV Rheinland companies are included under our Group-wide certification according to the international standards ISO 9001 (quality management), ISO 14001 (environmental management) and OHSAS 18001 (occupational health and safety). Three more companies joined the Group-wide certification in 2016: TÜV Rheinland Middle East LLC and TÜV Rheinland Middle East FZE in the United Arab Emirates, as well as TÜV Rheinland LLC in Oman. The companies of our Systems Business Stream are generally excluded from the Group-wide certification because they provide certification services of their own.

During the year under review, we were intensively involved in preparing for the revised international environmental management standard ISO 14001:2015, which ushers in a whole series of significant changes at once. Those changes include, above all, a holistic view of environmental aspects, which takes account of the organizational context, i.e. not only internal factors such as strategy and structures, but essentially all external framework conditions – and also the »interested parties,« i.e. the stakeholders. Organizational context and interested parties are both defined using a top-down approach. Countercurrent to this, regular management reviews are conducted from the bottom up. These two approaches will invest top management – in our case, the Board of Management – with significantly greater responsibility relative to environmental management in the future. Another major change concerns stronger risk-based thinking. In order to determine the organizational context within the meaning of the standard, during the year under review, we conducted several extensive analyses, the results and findings of which have already been incorporated into this Corporate Report. In 2017, TÜV Rheinland will be certified worldwide to the new standard for the first time.

## CLEAR OBJECTIVES, WIDELY VARIED CONTRIBUTIONS

In the context of our sustainability strategy, we pursue two key objectives in the area of environment:

- The energy consumption per employee is to be reduced to 20% below the 2010 level by 2020 throughout the Group.
- We also want to reduce CO<sub>2</sub> emissions per employee by 25% relative to 2010 by 2020 throughout the Group.

We have initiated a wide range of actions and projects – sometimes at the Group level, but often also within regional or local frameworks. Specifically, these measures promote:

- using more efficient energy technology to run our buildings,
- reducing the number of business trips through increased use of video conference technology,
- reducing fuel consumption and emissions through the use of more fuel-efficient company cars, and
- using state-of-the-art technologies to operate our data centers, test labs, and facilities.

Several projects at the site of our headquarters in Cologne, Germany – the TÜV Rheinland Business Park – are making an important contribution toward achieving our objectives. An efficient power plant has been supplying electricity, cooling and heat to six buildings there since April 2015. In the medium term, we will connect all ten buildings of the business park to the power plant. About half of the required heat energy will be covered by a combined heat and power unit and pellet-fired boilers. The waste heat from the power plant will be used, in turn, to generate absorption cooling. We expect that these measures alone will enable us to reduce the consumption of primary energy and emissions at the site by about one third. Renovation of the iconic symbol of our Group – the more than 40-year-old TÜV Rheinland high-rise – is proceeding right on schedule. We have replaced not only its

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### PROGRESS IN TARGET ACHIEVEMENT

		2010	2014	2015	2016	Delta*	Target 2020*
CO <sub>2</sub> emissions per employee (Group)	t	6.4	5.42	5.39	5.28	-17%	-25%
Energy consumption per employee (Group)	MWh	26.6	22.68	22.29**	22.01	-17%	-20%

\* Base year 2010.

\*\* Value for the previous year corrected due to a transcription error in Corporate Report 2015.



entire facade, but also the building technology and the lighting. We have also installed a state-of-the-art fire protection system. At the end of March 2017, some 650 employees moved back into their fully renovated workplaces. The renovation of the high-rise will enable us to reduce its real estate-specific primary energy demand at full occupancy by more than 50%.

Including further measures at other locations, we invested about EUR 24.3 million in resource-efficient new constructions and energy-oriented modernization projects in Germany during the year under review.

Many Group companies outside of Germany are also working to improve their environmental performance further with initiatives of their own. Here, too, even simple actions often prove remarkably effective. Some of the most efficient measures include the use of energy-efficient LED lighting and refraining from the use of standby mode in electronic devices. At many locations outside of Germany – in Japan or South Africa, for example – there are also programs in place to reduce paper consumption and encourage the consistent recycling of unavoidable paper waste. Along with all of these technical optimizations, all employees must become more acutely aware of how to handle resources of all kinds responsibly. To that end, we initiate regular awareness-raising programs. In April at our



site in Shenzhen, China, for example, a full »Green Week« was dedicated to the topic of emissions reduction.

In order to continuously expand our horizon in the field of climate protection and energy efficiency, we maintain a regular dialog with selected experts and other companies. In 2016 we participated in a so-called »peer learning group« on science-based climate targets and data management coordinated by the German Global Compact Network. Among other things, the participation provided us with important findings that helped us to formulate new TÜV Rheinland climate objectives beyond 2020 – targets which we are already intensely working towards. Those objectives should be consistent with the goal formulated by the UN Climate Conference held in Paris, which seeks to limit global warming to significantly less than 2 degrees Celsius – and even to 1.5 degrees Celsius, if possible – relative to the pre-industrial level. We will systematically expand our know-how once again in 2017: This year we will focus on data acquisition for Scope 3 emissions.



Everything under control: In the modern power plant of the TÜV Rheinland Business Park in Cologne, Joel Grilo monitors the eco-friendly production of electrical power, heating and cooling.



## ENERGY

The direct sources of energy used at TÜV Rheinland in Germany include fuels, natural gas, heating oil and – since 2015 – also wood pellets. Alongside those direct sources, electricity and heat are considered indirect sources of energy. We use electricity to operate our computers and servers, lighting, and technical systems. We buy district heating from local utility companies. With regard to our global presence, we assume that the electricity mix of TÜV Rheinland in each country corresponds to that country's electricity mix. In order to take national and local energy mixes into account when calculating our environmental performance, we use the respected »GaBi« database.

In the year under review, total power consumed at the locations in Germany under consideration was extrapolated to around 39,574 megawatt hours (MWh) (previous year: 38,507 MWh). For all of the Group's properties, total power consumption was extrapolated to 85,790 MWh (previous year: 83,168 MWh).

The enormous potential of the energy-oriented modernization of company buildings – intelligently combined with modern production plants for electricity, heating and cooling – is most clearly evidenced with a glance at the heating oil consumption of the TÜV Rheinland Business Park in Cologne: Within just three years, its consumption fell by more than half – from 215,715 liters in 2013 to just 96,784 liters now.

## MOBILITY

Our sales activities, the large number of jobs carried out on-site at our clients' premises, and not least the development and change processes in an ever more internationally oriented Group place a high demand on personal presence. Against this background, business travel is often indispensable. Nevertheless, we strive to reduce the amount of travel and the resulting environmental pollution, or at least to utilize the most environmentally friendly modes of transportation available. Particularly in the case of long-distance flights, we very carefully examine beforehand whether the exchange can be handled just as well and effectively by phone or by video conference.

We estimate that our employees in Germany logged about 67 million kilometers of business travel by car (company car, rental car, private car) in 2016 (previous year: 67 million kilometers). As in previous years, this estimate is based on the assumption that the employees who have access to one of our leased vehicles use their company car for business purposes about 70% of the time. Our 1,634 leased vehicles (previous year: 1,646 vehicles) in Germany accounted for an estimated 39.4 million kilometers of the aforementioned total (previous year: 39.3 million kilometers). On their business trips with leased vehicles, our employees used an estimated 2.45 million liters of fuel (previous year: 2.55 million liters of fuel).

We use the »Speedfleet« fleet management database to track the specific fuel consumption of our fleet of company cars in Germany. In 2016, consumption averaged 6.21 liters per 100 kilometers (equal to 163 grams of CO<sub>2</sub> per kilometer). In the previous year, the average was still 6.48 liters. We attribute that improvement to the 2015 revision of our company car policy, which now provides specific incentives for the use of fuel-efficient and therefore also low-emission vehicles. Every employee who opts for a vehicle with a CO<sub>2</sub> emission level below the guideline value, for example, receives a bonus, which they can apply toward such things as an expanded package of optional equipment.

During the year under review, our German employees traveled approximately 31 million kilometers by air (previous year: 30 million kilometers). This figure includes both domestic and international flights. Taking our international companies into account, we recorded a total



of 111 million kilometers traveled by air (previous year: 107 million kilometers). Unfortunately, published values of jet fuel consumption per kilometer flown continue to vary widely from airline to airline. So for comparison purposes, the figure of 0.05 liters of jet fuel per person per kilometer flown appears to us to be a realistic average to use in our calculations. On that basis, our 2016 jet fuel consumption on business flights totaled around 5.5 million liters for the entire Group (previous year: 5.3 million liters).

Our employees traveled approximately 6.5 million kilometers with the Deutsche Bahn rail service (previous year: 6.4 million kilometers). In doing so, they consumed 393 MWh of electrical energy (previous year: 390 MWh). Already since 2012, we have opted for Deutsche Bahn's climate-neutral option on all long-distance business travel where we use their rail services.

### WATER

As a result of the analysis that we carried out in 2016 in conjunction with the ISO 14001 audit, we now consider water a relevant environmental issue once again and include it accordingly in our external reporting. For all of our properties worldwide, we drew 395,100 m<sup>3</sup> of water from local drinking water supplies in 2016. The water comes from local surface or groundwater storage and is used for the usual purposes, such as in sanitary facilities, for cleaning, or in cafeteria operations. Our German locations consumed an extrapolated 204,373 m<sup>3</sup> of water.

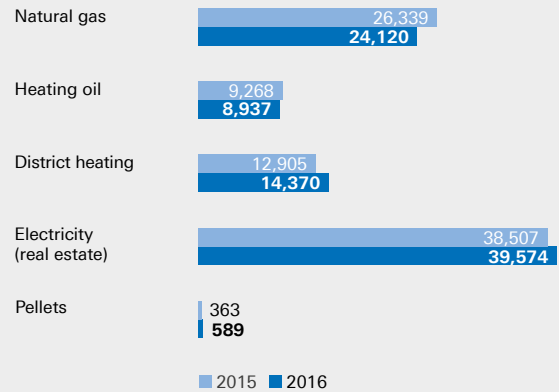
### MATERIALS

In the context of the analysis mentioned above, we also identified materials as relevant once again. In the context of our business activity, we procure no raw materials or semi-finished products, nor do we process any such materials or products. In view of this, we do not keep records of the weight or volume of materials that we use. Paper is an exception to that rule: we regularly record those quantities. As standard paper, our German locations use FSC-certified paper produced from sustainable forestry. As we strive to become as paperless as possible, our offices are especially turning to the digital archiving of files and an electronic SharePoint system, with which we can also exchange and edit virtual documents efficiently. In 2016 we purchased 495 tons of paper worldwide, of which 315 tons were delivered to our German locations.

## KEY ENVIRONMENTAL DATA

### ENERGY CONSUMPTION (GERMANY)

in MWh



The 2016 data reflects the increased use of more environmentally friendly energy sources (district heating and pellets).

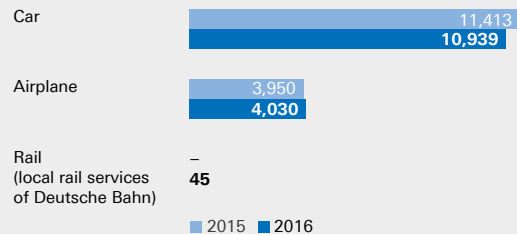
### CO<sub>2</sub> EMISSIONS FROM ENERGY CONSUMPTION (GERMANY)

in metric tons	2015	2016
from natural gas	5,268	4,824
from heating oil	2,445	2,357
from district heating	3,471	3,865
from electricity (real estate)	24,414	23,982

Energy production using wood pellets is considered carbon neutral.

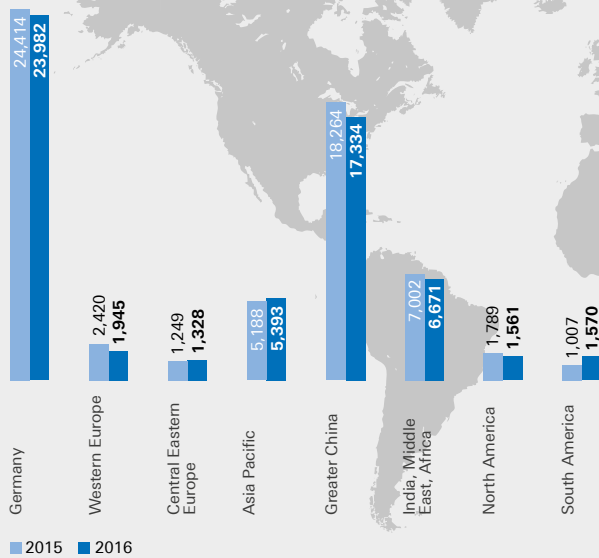
### CO<sub>2</sub> EMISSIONS FROM BUSINESS TRAVEL (GERMANY)

in metric tons

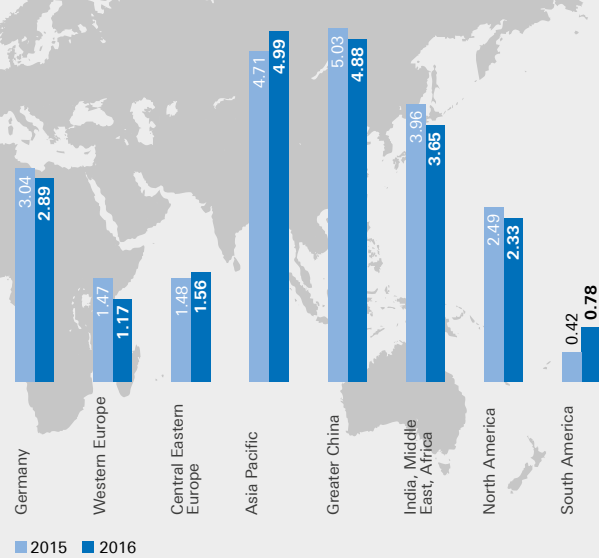


All long-distance business travel with Deutsche Bahn has been carbon neutral since 2012. Emissions from the use of Deutsche Bahn's local rail services were recorded for the first time in 2016.

**CO<sub>2</sub> EMISSIONS FROM REAL ESTATE ELECTRICITY CONSUMPTION**  
in metric tons



**CO<sub>2</sub> EMISSIONS FROM ELECTRICITY CONSUMPTION PER EMPLOYEE**  
in metric tons



**CO<sub>2</sub> EMISSIONS (DIRECT AND INDIRECT)**

in 1,000 t CO <sub>2</sub>	2015	2016
<b>Total/Group</b>	<b>105.9</b>	<b>105.5</b>
of which, direct	42.5	21.3
of which, indirect*	63.4	84.1
<b>Germany</b>	<b>51.0</b>	<b>50.0</b>
of which, direct	23.1	13.6
of which, indirect**	27.9	36.4

\* Excludes CO<sub>2</sub> emissions from rail travel outside of Germany.  
\*\* Includes CO<sub>2</sub> emissions from rail travel.

The significant differences in direct and indirect CO<sub>2</sub> emissions values versus the previous year are attributable to two factors:

1. Emissions from air travel and the use of rental cars are now listed under »Indirect CO<sub>2</sub> emissions.«
2. In Germany, CO<sub>2</sub> emissions from local rail travel with Deutsche Bahn are also listed under »Indirect CO<sub>2</sub> emissions« starting from 2016.

**TÜV RHEINLAND ENVIRONMENTAL PERFORMANCE PER EMPLOYEE\***

		Germany			Group		
		2014	2015	2016	2014	2015	2016
CO <sub>2</sub> **	t	6.66	6.34	6.04	5.42	5.39	5.28
Energy**	MWh	29.06	27.60	27.15	22.68	22.29***	22.01
Business travel	km	12,808	12,935	12,630	11,880	11,706	11,315
Paper	kg	51.50		37.96	32.50		24.80
Water	l	23,139		24,663	18,001		19,796

\* Full-time equivalent.  
\*\* CO<sub>2</sub> emissions per employee are the result of all energy sources and business travel. This calculation does not include district heating, natural gas, and heating oil used by our foreign subsidiaries.  
\*\*\* Value for the previous year corrected due to a transcription error in Corporate Report 2015.

## SOCIETY

### CLEAR CONCEPT FOR A GOOD CAUSE

In the context of our sustainability strategy, we regularly consider the question of how we can give something back to society in return for the many ways we, as a company, benefit from it.

We prefer to become involved in projects and activities which

- advance education and science,
- protect people and the environment, or
- support the principles of the UN Global Compact.

Despite this relatively narrow focus, the list of potential commitments is still practically endless. That is why we apply clear criteria during the actual selection process: Supported projects must always embody and reinforce the values we represent, or they must be either closely linked to our business activities or established in our locations' local environment or markets.

Especially when it comes to larger projects, we normally do not act alone: Rather, we work together with one or more specialists familiar with the topic. Our partners include charitable organizations and NGOs as well as government-sponsored institutions or other companies from private industry. We maintain a longstanding, intensive partnership with the globally active organization Engineers

without Borders Germany, to which we provide regular financial support with our traditional Christmas donation, for example.

The volunteer spirit of our employees reflects a longstanding tradition, which TÜV Rheinland supports worldwide not only in principle but also in the form of time off from work. We expressly welcome this and actively encourage our employees to make a voluntary contribution to society, thereby also extending the horizons of their individual knowledge and experience. That same philosophy is the underlying basis for the volunteer platform in our corporate platform »blueeye,« where volunteers who are already actively involved can exchange experience and present new initiatives. Potential volunteers, in turn, find inspiration and resources there for a personal commitment.

Each and every one of our diverse charitable activities during the year under review deserves full recognition here, but by their sheer number – which is actually good news in itself – they would far exceed the scope of this Corporate Report. Nevertheless, we would like to present at least a brief sampling of them to you on the following pages.





Learning from one another: Alsény Barry and Tobias Hainke form one of the eight integration tandem teams, with which we also promote integration of refugees beyond the workplace.



## AN OPPORTUNITY FOR EVERYONE

Since the start of 2015, more than a million refugees have come to Germany seeking protection from war, political persecution and discrimination – a wave that caught the population, political institutions and economy unprepared. Soon there was no doubt in our minds: Beyond emergency aid in reception centers and material donations, we want to help create sustainable structures for successful integration.

## We want to help create sustainable structures for successful integration.

As a key element to promote integration, TÜV Rheinland Akademie added language courses for refugees to its curricula portfolio at the end of 2015. Attended by well over 2,000 people to date, these courses teach the basic German language skills necessary for everyday interactions. In parallel, on behalf of the Goethe Institute, our specialists developed a virtual expedition across the German work landscape. With a lighthearted approach, it helps refugees become familiar with the everyday environment in Germany, in and out of the workplace.

We provided more concrete prospects for refugees to enter the work world by creating twelve new vocational training positions, eight of which we were ultimately able to fill with suitable candidates in IT, material and construction material testing, and food service in Nuremberg and Cologne. Eight trainee positions filled, which might not seem like much at first glance, but for TÜV Rheinland it represents an increase of almost one

third compared to the 30 trainee positions originally planned. In order to ensure that they complete their training successfully, we provide intensive support to our new trainees. They received intercultural training, for example, and attend weekly German language classes as part of a course designed and organized by employees of TÜV Rheinland Akademie. And we also assist trainees with their official administrative procedures. Integration mentors serve as personal contacts during the first year of training, help trainees get their bearings in the company, and also foster language development through regular conversations.

In view of the ongoing political tensions in many countries, we assume that refugees will continue to seek a safe future in Germany in large numbers, also in the coming years. For that reason, filling additional trainee positions with refugees is not intended to be a one-time action. By joining the »wir zusammen« (»we together«) initiative – a network that bundles companies' support for refugees and presents it on a shared platform – we publicly acknowledge our commitment to continue our actions. We want to create additional trainee positions at other German locations for training year 2017, for example. We also want to take the integration mentorship program that we successfully started in Cologne and gradually expand it to other training locations in Germany.



# WORLDWIDE COMMITMENT – AN ABBREVIATED LIST OF OUR DIVERSE ACTIVITIES

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**GERMANY**

▲ **Girls' Day**

Once again in 2016, we hosted a large number of girls from age 10 to 16 years at our locations in Cologne and Nuremberg, where they got an exciting glimpse into the work world of TÜV Rheinland.

**POLAND**

■ **Giving to a good cause**

In 2016, a number of different donation drives benefited various causes, including an orphanage, an animal shelter and needy people.

**HUNGARY**

▲ **Girls' Day**

In collaboration with the Association of Hungarian Women in Science, we presented the diverse prospects of technical careers to a group of female students from 13 to 17 years of age.

● **Safer playtime fun**

In Köszeg, our employees voluntarily inspected a school playground in their spare time, thereby ensuring that some 300 children have a safe place to play.

**BRAZIL**

● ■ **Fresh paint**

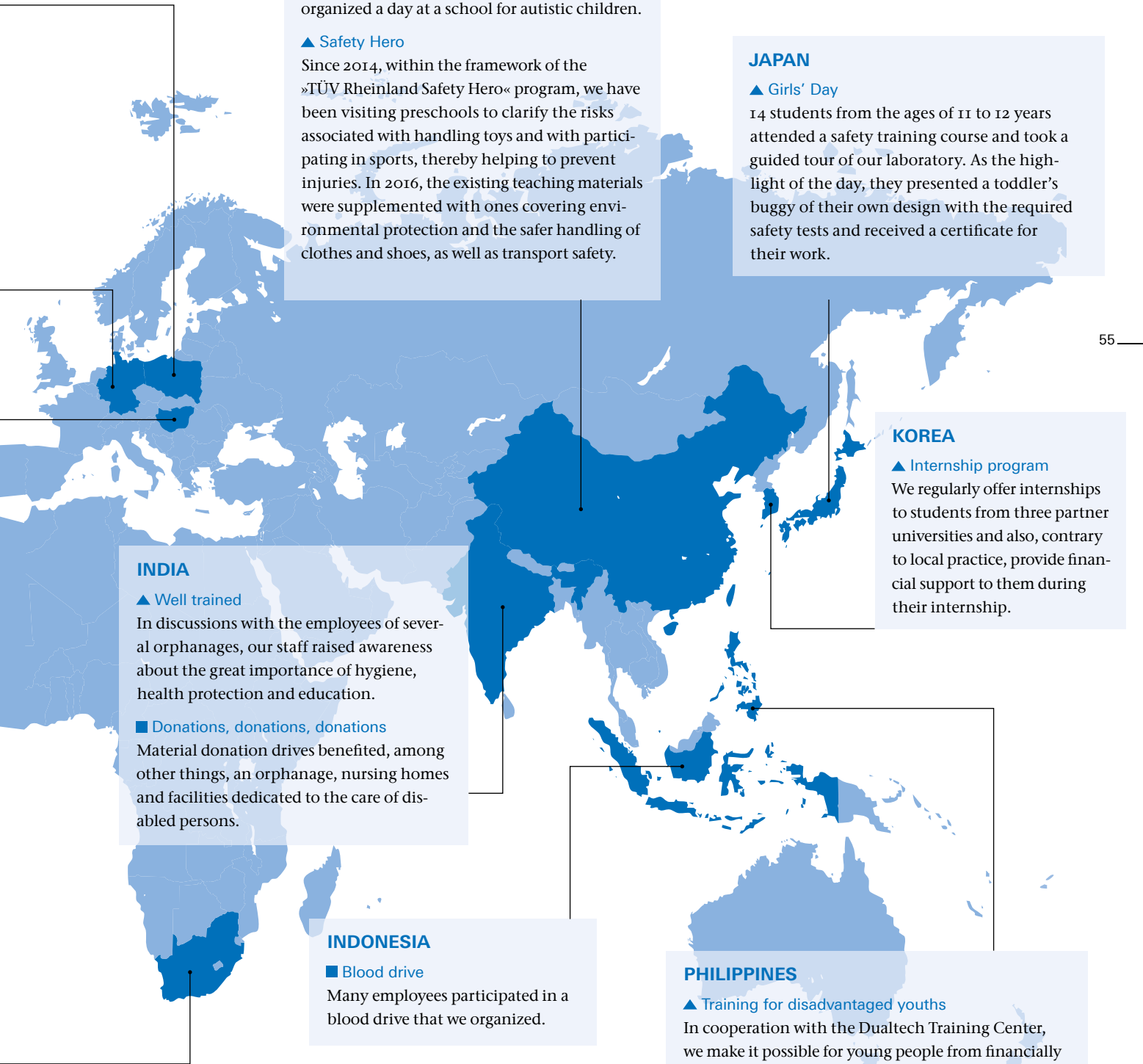
Within the framework of a volunteer day initiated by our customer Prologis, our employees painted a playground and donated toys to the organization operating the playground.

**SOUTH AFRICA**

▲ **Subvention of qualification programs**

Within the framework of various programs, we help improve employment opportunities for young people.

- Volunteer work
- ▲ Charitable project
- Donation



**CHINA**

● **Tree planting action**

In March, some 100 adults and children took part in a tree planting action in Qingdao. More than 50 sprouts and saplings were planted.

● **Visit to a special needs school**

In May, 15 employees of our Shenzhen location organized a day at a school for autistic children.

▲ **Safety Hero**

Since 2014, within the framework of the »TÜV Rheinland Safety Hero« program, we have been visiting preschools to clarify the risks associated with handling toys and with participating in sports, thereby helping to prevent injuries. In 2016, the existing teaching materials were supplemented with ones covering environmental protection and the safer handling of clothes and shoes, as well as transport safety.

**JAPAN**

▲ **Girls' Day**

14 students from the ages of 11 to 12 years attended a safety training course and took a guided tour of our laboratory. As the highlight of the day, they presented a toddler's buggy of their own design with the required safety tests and received a certificate for their work.

**INDIA**

▲ **Well trained**

In discussions with the employees of several orphanages, our staff raised awareness about the great importance of hygiene, health protection and education.

■ **Donations, donations, donations**

Material donation drives benefited, among other things, an orphanage, nursing homes and facilities dedicated to the care of disabled persons.

**INDONESIA**

■ **Blood drive**

Many employees participated in a blood drive that we organized.

**PHILIPPINES**

▲ **Training for disadvantaged youths**

In cooperation with the Dualtech Training Center, we make it possible for young people from financially disadvantaged circumstances to get high-quality technical training according to the German system. To date, we have helped about 20 trainees obtain their diploma. We hired about half of them as permanent employees upon graduation.

**KOREA**

▲ **Internship program**

We regularly offer internships to students from three partner universities and also, contrary to local practice, provide financial support to them during their internship.

# Financial Report

A decorative graphic consisting of several thin, parallel, wavy lines in a dark blue color, spanning the width of the page and curving slightly upwards at the ends.

# Group Management Report

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# GROUP MANAGEMENT REPORT

## TÜV RHEINLAND AKTIENGESELLSCHAFT FOR 2016

### THE RESULTS FOR 2016 AT A GLANCE

- The TÜV Rheinland AG Group has concluded the 2016 financial year in a demanding overall industry environment, with revenues (including inventory changes) of €1,918 million (+1.9% over the previous year), thus continuing the successful course for growth of recent years. At constant exchange rates, the Group generated total revenues of €1,940 million, which corresponds to growth of 3.1%.
- The results for 2016 are as follows:
  - Earnings before interest, taxes, depreciation, and amortization (EBITDA) total €193.4 million (previous year: €160.3 million).
  - Earnings before interest and taxes (EBIT) total €122.6 million (previous year: €91.3 million).
  - Consolidated net income totals €66.0 million (previous year: €38.2 million).
  - The profit margin before tax is 5.4% (previous year: 3.9%).
  - International sales account for 50.2% of revenues in 2016, employees abroad for around 58% of the Group's workforce.

### PRESENTATION OF THE BUSINESS STREAMS

As an independent testing company, for more than 140 years, TÜV Rheinland has stood for quality, efficiency and safety in the interaction between people, technology and the environment in almost all areas of the economy and life.

As a neutral and independent third party, TÜV Rheinland inspects and tests technical equipment, products, and services, and monitors projects and processes for companies. The Group does so on the basis of recognized

standards as well as national and international legal provisions. Added to this are services relating to information security, occupational health and safety, and training and professional qualification.

With new ideas, expertise, and a global network, this is how TÜV Rheinland lends a hand in making products, services, systems, and people safer and more competitive.

The work carried out by TÜV Rheinland is based on the conviction that societal and industrial development is not possible without technical progress. That is precisely the reason why the safe and responsible use of technical innovations, products, and systems is of decisive importance. TÜV Rheinland monitors, develops, tests and certifies. This is how it helps build a future that sustainably meets the requirements of humankind and the environment.

The work of TÜV Rheinland work is organized into six Business Streams: Industrial Services, Mobility, Products, Academy & Life Care, Systems and ICT & Business Solutions.

The **Industrial Services Business Stream** generated revenues of €520 million in 2016. This covers the Business Fields of Pressure Equipment; Lifting Equipment & Machinery; Electrical Engineering & Automation; Industrial Inspection; Infrastructure & Civil Engineering; Energy & Environment; as well as Project Management; Materials Testing and Non-Destructive Testing. The services include, for example, testing of pressure vessels, elevators and lifts, and systems in building technology; monitoring of industrial and infrastructure projects; civil engineering and materials inspection and testing; and environmental and pollutant analysis.

The **Mobility Business Stream** achieved revenues of €486 million in 2016. In addition to Periodical Technical Inspections and Rail, the Business Stream is also responsible for Driver's Licenses in Germany, Car Services & Appraisal, testing of eligibility of vehicle components and vehicles (homologation), intelligent transport systems, and logistics. The Business Stream is also involved in developing new services for safety in the networked mobility of the future.

The **Products Business Stream** generated revenues of €519 million in 2016. Among other things, the Business Stream performs testing for product functionality, serviceability, ergonomics and safety, as well as the certification of products. This is often a prerequisite to ensuring that manufacturers, importers or trading companies can offer their products in certain markets. The Products Business Stream tests everyday articles – such as consumer electronics, glass, furniture, textiles, toys, leisure articles or household appliances. Added to this, for instance, are tests in environmental and pollutant analysis; testing of the electromagnetic compatibility of electrical and electronic products, machinery and medical devices; as well as testing of solar modules, batteries or fuel cells.

The **Academy & Life Care Business Stream** combines the expertise and services of TÜV Rheinland applicable to the individual in his or her workplace and career environment. This comprises topics in HR development and consulting services, further education and seminars, corporate health management, occupational health and safety, and certifications of individuals, labor market services & private schools. The Business Stream achieved revenues of €219 million in 2016.

TÜV Rheinland has bundled its Cyber Security and telecommunications services in the **ICT & Business Solutions Business Stream**. The Business Stream achieved revenues of €131 million in 2016. ICT is the abbreviation for »Information and Communication Technology.« In this Business Stream, specialists offer strategic consulting, conceptual design and process optimization, as well as implementation and certification of secure IT systems, cloud technologies and telecommunications networks, on an international scale. The aim is to support businesses as well as government agencies and institutions with effective strategies and solutions for information security and telecommunications within the context of digital transformation processes.

The **Systems Business Stream** generated revenues of €166 million in 2016. This Business Stream certifies management systems and processes, certain services or entire enterprises as an independent third party. These include, in particular, quality management systems (e.g. ISO 9001) and environmental management systems of numerous businesses (ISO 14001 and the European EMAS system), as well as service quality, compliance management and energy management.

## GENERAL CONDITIONS

### General Economic Conditions

After a moderate start, the pace of global economic expansion increased toward the middle of the year. Global economic growth rose in 2016 at an average rate of 3.1% (previous year: 3.2%). Growth in the global economy is sustained by household consumption. The global economy also benefits from a very expansive monetary policy and fiscal stimuli. By contrast, the positive effect on purchasing power has subsided as a result of prior-year declines in energy costs. A more robust expansion in the global economy was also impeded by the danger of escalating political conflict, and by uncertainties brought on by »Brexit.« The United States and British economies remain on the upswing, and the recovery in the Eurozone – sustained by a robust economic environment in Germany – continues at a moderate pace. The growth seen in the BRICS countries, on the other hand, has become cloudy, in some cases significantly so.

An overall positive trend in economic prospects is emerging. After the oil price fell significantly again at the beginning of the year, a slight recovery is discernible over the course of the year, contributing to an economic upturn for the emerging economies. Still, the average oil price for the past year is below the average price for 2015. In the developed economies, an expansionary fiscal policy is the primary source of the continuing moderate recovery. Nevertheless, there are risks for future development due to geopolitical tensions and current volatility in the political environment.

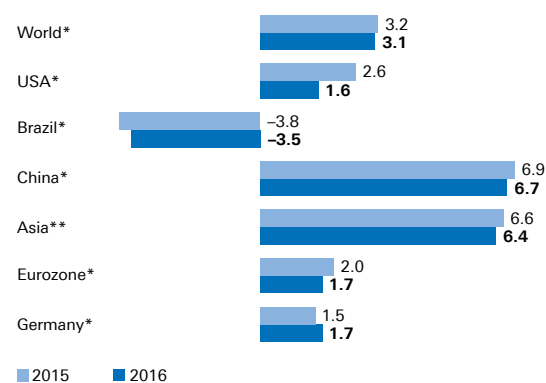
**USA:** Economic indicators from the United States paint a mixed picture. On the one hand, gross domestic product in the US economy grew by an average of 1.6%, which was weaker than the previous year (previous year: 2.6%). The trend in business investment in particular was weak due to the negative investment climate and deteriorating financing conditions. On the other hand, the development in household consumption and exports was positive, buoyed by robust conditions in the job market. The expectation is that the increase in the interest rate by the Federal Reserve System (Fed) in December, in response to negative real interest rates, will stimulate the economy.

**BRICS countries:** The economic development of the BRICS countries is particularly important to the TÜV Rheinland AG Group due to its presence in these countries, particularly in Brazil and China. There are large differences among the BRICS countries, however. While India can still report a high rate of growth, the economic situation of Brazil and Russia, which are both in recession, improved only slightly. This owes particularly to the slight recovery in the prices of commodities.

**China:** With an increase of 6.7% in gross domestic product (previous year: 6.9%), the Chinese economy still grew at a significantly stronger rate than that of the other industrialized nations, although with an increasingly negative trend. After an initially weak start of the year, the Chinese economy grew over the course of the year. The recovery is mainly due to monetary and, increasingly, fiscal measures that have already been initiated. The long-term growth trend will weaken in light of demographic trends, however.

**Brazil:** With a 3.5% decline in economic output, compared to a change of -3.8% the previous year, there is a slight improvement in the economic situation of Brazil, which is currently undergoing its deepest recession in more than a century. The main reason for the improvement is a slight recovery in commodity prices. A negative factor is the low and still-falling rate of investment. In 2016, the Brazilian government introduced a new program that provides for privatization and concessions by means of requests for proposals. The aim is to try to attract foreign direct investment as a driver for growth.

**ECONOMIC GROWTH IN KEY MARKETS**  
of TÜV Rheinland AG Group  
in %



\* Source: IMF World Economic Outlook Update January 2017.

\*\* Source: IfW Kiel, Weltkonjunktur im Winter 2016.

**Eurozone:** In an environment of low interest rates and a weak euro, development in the European economy was less dynamic than it had been the year before. Gross domestic product increased by 1.7% for the year on the whole (previous year: 2.0%). The expansion was significantly driven by increased foreign demand and by high levels of demand in private consumption. Consumption benefits from growth in real disposable incomes and an overall decline in the unemployment rate. The expansive, »whatever it takes« monetary policy of Mario Draghi remained in effect. Stronger growth, however, was prevented by existing risks, such as the risk of escalation in geopolitical conflicts. The uncertainty stemming from »Brexit« also had an inhibiting effect and is viewed as an indicator of increased political risks in the currently volatile political environment.

At the level of the individual countries of the Eurozone, where the economic picture is concerned, a distinction must be made between three groups: The first group consists of countries in which utilization of capacity is comparatively high and job markets are healthy. Examples of such countries are Germany, the Baltic countries and Ireland. The second group comprises countries in which capacity is far underutilized, but that have developed positively overall nonetheless, such as Spain, France and the Netherlands. The third group includes countries with underutilized capacity and a weak pace of growth at the same time. These include Italy and Portugal, for example.

**Germany:** The German economy continued the upswing already observable in recent years again in 2016. The German economy defied not only the restless international environment – such as the sustained political uncertainty in the Eurozone – but also the slower trend in global trade. Overall growth in 2016 stood at 1.7% (previous year: 1.5%). A major support in this regard is private consumption. Consumers' real purchasing power, which profits from low inflation, stimulated household consumption patterns. State consumption also increased significantly in 2016; a major influencing factor in this regard was the outlay for care and accommodation of refugees in Germany. However, German foreign trade is slowing down the German economy, due in particular to lower demand from the United States.

This resulted in considerably less corporate investment. The very high overall Ifo Business Climate Index for the month of December points to a continued brightening in economic outlook.

#### Market-Specific Development

TÜV Rheinland offers its testing, inspection and certification services through companies on all five continents throughout the global TIC (Testing, Inspection, Certification) market. This gives the Group the ability to serve clients' often worldwide value chains. Demand for the testing, inspection, certification, consulting and training services of TÜV Rheinland is particularly high among clients in economically strong, industrialized countries. At the same time, new sales potential is developing in emerging markets such as the BRICS countries. The global TIC market, and hence the business of TÜV Rheinland as well, are influenced by the following market factors and trends:

**Globalization:** Issues such as energy supply, infrastructure and mobilization are continuing to gain importance for our globalized society. For the TIC market, globalization entails opportunities and risks at the same time. Increasing liberalization efforts in markets strengthen global trade and open up opportunities to enter new markets. Worldwide supply chains render high-quality and globally uniform testing standards and certification services indispensable. Already today, with its global orientation, TÜV Rheinland is very well positioned for increasing internationalization. Due to the elimination of barriers to entry, there is a risk of increasing competitive and margin pressure.



**Technologization and Digitalization:** The rise of new information technologies is changing society as well as the global markets and products. Against the backdrop of this digital transformation, TÜV Rheinland ensures the quality, safety, and ease of use of the technologies involved. The following market trends are of particular importance here:

- **Internet of Things:** Through the networking of technologies of everyday life with the internet, in the area of smart home solutions, for instance, the physical and online worlds are converging. This presents sweeping new opportunities but also challenges for providers and consumers alike.
- **Big Data:** Rapidly increasing use of the internet means that data providers are generating large volumes of data. The challenge is to make these quantities of data manageable while creating conditions that permit profitable use of them.
- **IT Security:** Round-the-clock availability and transmission of data – with mobile payments, for instance, or data storage in the cloud or in industrial plants – provide a textbook case of the growing importance of IT security.
- **Intelligent Transport Systems:** The vehicles of tomorrow will drive autonomously, permit remote diagnostics and offer a host of systems for safety and comfort. Mastering this communications infrastructure and ensuring transportation safety are central challenges for the mobility market.

**Industry 4.0:** The economy is on the verge of the next industrial revolution. In the future, the shape of industrial production will be characterized by strong customization of products under conditions of highly flexibilized (high-volume) production. Under this form of hybrid production, complex data networks will link customers and suppliers with production over the entire value chain. The experience TÜV Rheinland has in supply chain services and asset integrity management will result in market potential in the Business Streams of Industrial Services and Products.

**Demographic Change:** TÜV Rheinland also views the demographic trend toward a globally aging population structure as an opportunity. In certain markets, such as health care and nursing care, an increase in demand for services in this portfolio can already be seen.

**Increasing M&A Activities/Consolidation in the Market:** In the market for technical services and particularly in the TIC market, a further trend toward consolidation can be seen as a result of major acquisitions or takeovers. This results in both opportunities and risks for companies based on their positioning in the changing TIC market. TÜV Rheinland has further strengthened its position through selective acquisitions made on a smaller scale.

The TÜV Rheinland AG Group provides products and services in the area of TIC for a variety of markets and industries worldwide. While global economic trends are important to TÜV Rheinland, they are not all-deciding, given the Group's diversification across industries and regional markets. In addition, the company is largely unaffected by specific developments in individual industries, particularly when it comes to mandatory inspections. At the same time, the following general economic and market-specific conditions in 2016 had an effect on TÜV Rheinland's business:

Overall economic conditions were slightly upbeat in 2016. Because in some cases the economy developed quite differently in the individual regional markets, the effects on the business of TÜV Rheinland must be analyzed by countries and regions.

The European portion of TÜV Rheinland's business profited from the generally positive economic climate. On the other hand, after the marked decline at the beginning of the year, business in the UK, which is focused on energy and oil was not able to benefit from the slight recovery in commodity prices and the generally strong situation of the British economy.

Growth in the US economy, which was weaker than the previous year, affected the business of TÜV Rheinland with slightly downward-trending demand. The decline in demand affects the US market particularly in the oil and gas sector, as well as the Mexican market.

Against the backdrop of positive overall economic conditions in the regions of Greater China and Asia Pacific, TÜV Rheinland's business in those regions remains one of the mainstays of growth for the Group. The business there is resistant to the declining trends in growth in the Chinese markets. Total sales growth for the region is relatively homogeneously distributed across the individual countries, with TÜV Rheinland continuing to achieve particularly strong rates of growth in Indonesia, Korea, the Philippines and Taiwan.

The most dynamic growth in 2016 was seen for TÜV Rheinland in the IMEA region (India, Middle East and Africa). The India business was able to continue on from the strong previous years and benefited from that country's economic dynamics, which remained high. Revenues in the Gulf States rose significantly, in spite of what was just a modest recovery in oil prices. Its acquisition of a group of companies in the Maghreb will permit TÜV Rheinland to position itself more firmly there.

Despite the continuing political and economic crisis in Brazil, in a year-over-year comparison, TÜV Rheinland was able to improve its earnings in South America. While demand in the Brazilian market in particular continued to decline, there were positive signals from the markets in Argentina and Peru. An upward trend was seen particularly in demand for services around electronic products, and in demand within the Systems Business Stream. Because the price of oil fell significantly again at the beginning of the year and recovered only slightly during the course of the year, there was no recovery in the demand for services in the areas of energy and infrastructure.

The slight easing of the crisis in Russia also had a positive effect on business for TÜV Rheinland.

As a globalized service company, the goal of TÜV Rheinland is to systematically strengthen its operations worldwide. The focus at TÜV Rheinland in this regard is particularly on expanding its operations in the markets in which the company can make ideal use of its competitiveness and tap new markets as a result.

In its market position, the TÜV Rheinland AG Group ranks among the largest market participants in the TIC sector. Overall, the TÜV Rheinland AG Group views itself as extremely well-positioned compared to the international competition, and is confident that it will succeed in further improving its position in the global TIC market. In this connection, the increasing liberalization of the markets and expanding international trade are both to be viewed as opportunities.

Consumers' increased demand for information – in relation to information about production conditions, for instance, or a responsible approach toward the environment – can be met through complete and credible transparency. In this connection, independent testing companies such as TÜV Rheinland play a crucial role, as they generate security and credibility through certification and proof of testing. To maximize the comprehensibility of the testing approach, TÜV Rheinland provides the certificate database Certipedia, in which users can search for details such as testing criteria or methods. TÜV Rheinland also offers its customers a Customer Information System that they can use to manage all of the information associated with TÜV Rheinland. A web portal makes the certification process more transparent. This close communication between customers and TÜV Rheinland makes it possible to close vulnerability gaps and improve efficiency.

Further advances in digitalization increase the risks of hacker attacks and cyber crime. The IT security experts at TÜV Rheinland provide support predominantly for medium-sized entities with the »APT Defense Service,« which, for instance, contains a sensor-based review of network traffic. The Cyber-Security Division of TÜV Rheinland develops solutions for the main security questions involved in networked production facilities, smart home systems or the increasing use of cloud data storage.

Legislatures have turned to measures such as the German IT Security Act or the EU Cybersecurity Directive in an attempt to counter the growing risk of cyber-crime. These measures include obligations to comply with minimum standards with regard to IT security. In this context, TÜV Rheinland offers services worldwide, ranging from strategic consulting and process optimization to implementation or certification of secure IT systems and telecommunications networks.

In addition to the growth potential that presents itself through advances in digitalization, other positive effects are also expected for the original core business of TÜV Rheinland. Particularly the increased demands on the mobility market by intelligent transport systems present opportunities for expansion in TÜV Rheinland's business. TÜV Rheinland expects other growth opportunities through increasing demand for quality assurance along the supply chain, for example by means of system certification, product testing and inspections, as well as in the field of energy and infrastructure.

### **CORPORATE MANAGEMENT – GROWTH AND LONG-TERM VALUE ENHANCEMENT AS TARGET**

The business strategy of TÜV Rheinland defines the company's focus and goals for the coming years. The main pillars of the strategy are profitable growth, further internationalization, and a systematic focus on the Group's customers.

The area of corporate management relies on a Group-wide management information and controlling system that creates cost and income transparency in all areas, thus contributing to profitable earnings performance. Reporting is standardized worldwide and is based on IFRS, the International Financial Reporting Standards.

The focus is on the following financial target and management figures: revenues, earnings before interest and taxes (EBIT) as well as requirements for optimized working

capital management. The Group's value-oriented management is further strengthened by making these performance and management figures a fixed component of the executive-level compensation structure.

Approved in 2015, the Business Strategy 2020 takes into account essential, sustainable changes that stem from the digital revolution and ongoing globalization. The aim is to ensure that TÜV Rheinland remains sustainable and successful in a TIC market characterized by continued consolidation.

The aim is to continue to achieve profitable growth in all Business Streams into the future. Above-average growth is expected in the ICT & Business Solutions, Products and Industrial Services Business Streams.

The focus areas are clearly defined: The reputation of the TÜV Rheinland brand continues to enjoy top priority. The quality of the services and innovations in the TÜV Rheinland AG Group also represent elements of sustained success. In addition, an increase in return has been set as a target in order to ensure the Group's investment capability.

With this in mind, particular focus in investments is placed on the work areas of digitalization (e.g. IT Security, Industry 4.0 or Intelligent Transport Systems), Supply Chain Services (qualification of the supply chain through system certifications, product testing and inspection) as well as Energy and Infrastructure (e.g. railway technology, asset integrity management). Thus TÜV Rheinland is concentrated on work areas that already belong to its core business or give rise to expectations of significant market growth.

Within the scope of the Business Strategy 2020, both organically and through acquisitions, sales of the TÜV Rheinland AG Group are expected to grow by 6.9% annually, going from €1.9 billion in 2016 to €2.5 billion by 2020; the EBIT margin is expected to improve markedly, from its current level of 6.4% (previous year: 4.9%) to 9.0%.

## RESULTS OF OPERATIONS, FINANCIAL POSITION AND NET ASSETS

The TÜV Rheinland AG Group’s consolidated financial statements are prepared in accordance with the International Financial Reporting Standards (IFRS).

Due to a revised accounting opinion with regard to the recognition of the purchase price of an acquisition in 2014, the consolidated financial statements for 2016 contain a retroactive adjustment of previous years. This has effects on a variety of items in the balance sheet and on the income statement. Detailed information in this regard can be found in the notes to the consolidated financial statements.

### Development of Revenues

The Group’s worldwide revenues, including inventory changes, are broken down in the following tables; due to the significance of exchange rate fluctuations in 2016, the tables also contain the figures adjusted for exchange rates:

#### REVENUES BY BUSINESS STREAM

in € millions	2015	2016	2016*
Industrial Services	543	520	536
Mobility	471	486	487
Products	485	519	525
Academy & Life Care	205	219	220
ICT & Business Solutions	133	131	131
Systems	162	166	170
Other**	-118	-123	-128
<b>Total</b>	<b>1,881</b>	<b>1,918</b>	<b>1,940</b>

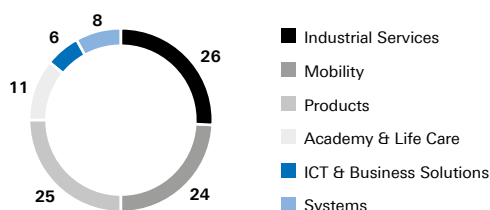
\* Revenues at constant exchange rates.

\*\* Intra-group revenues and central functions.

The following graph shows the percentage of revenues generated by each Business Stream:

#### REVENUES BY BUSINESS STREAM

in %

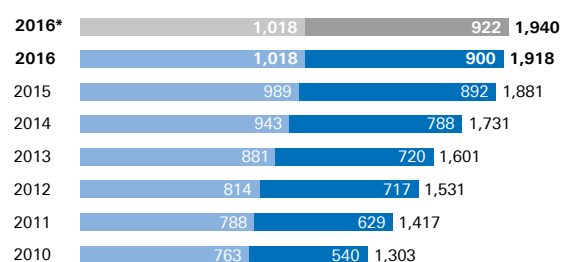


TÜV Rheinland AG Group revenues (including inventory changes) totaled €1,917.6 million in 2016. That amounted to a revenue increase of €36.3 million or relative revenue growth of 1.9% year-over-year.

#### DEVELOPMENT OF REVENUES

(including inventory changes)

in € millions



■ Germany ■ Abroad

\* Revenues at constant exchange rates.

In 2016, changes in exchange rates, particularly with regard to the Japanese yen, contributed to an increase in revenues; the devaluation in the Chinese yuan, the Brazilian real and the Argentine peso, on the other hand, led to a reduction in revenues. Holding exchange rates constant, revenues were up by €22 million, resulting in currency-adjusted revenues totaling €1,940 million. This corresponds to revenue growth of 3.1%. Added revenue in the amount of €51.8 million was obtained from the existing range of services; the extension of the scope of consolidation had a positive impact of €7.2 million on the increase in revenue.

Domestic revenue growth was essentially organically based; worthy of particular note in this connection are the Products, Mobility and Industrial Services Business Streams which, combined, contributed to single-digit percentage overall growth in revenues in spite of a highly competitive environment. Revenue growth abroad is mainly organic as well; revenues were markedly higher there, particularly in the Greater China, IMEA, and Asia Pacific regions. Acquisitions, such as those of Maghreb SARL or CERTIFICATION MAROC SARL, had only a slight impact, however. The revenue trend in the region of South America was – also as a result of currency effects – slowed mainly because of Brazil.



Once again, the greatest contribution to revenue came from the **Industrial Services Business Stream**. Revenues were €23 million or 4.2% lower year-over-year; at constant exchange rates, the decline is not as pronounced and stands at €7 million or 1.4%. This owes mainly to the still difficult project management business in Brazil; revenues in this Business Field are down 31.4% year-over-year. The reason for this is the ongoing political and economic crisis in Brazil, which goes hand in hand with continued weakness in the demand for services in the areas of energy and infrastructure. Continuing low prices in key commodities, such as iron ore and petroleum, also had a continued negative impact on important TÜV Rheinland customers in Brazil. The unfavorable shift in exchange rates continued to magnify the strain on revenues in the Project Management Business Field. Despite stabilization in oil and gas prices, the Energy & Environment and Pressure Equipment Business Fields, as well as the entire region of North America, were affected by continued low levels of business investment. In contrast to this, particularly the Business Fields of Industrial Inspection worldwide, and Lifting Equipment & Machinery in Germany, were able to increase their revenues by 33.0% and 8.2%, respectively. The Electrical Engineering & Automation Field also reported revenue growth. In addition to very strong business in Germany, the Business Stream grew especially in the IMEA as well as the Central and Eastern Europe regions.

The **Mobility Business Stream** increased its revenues by €15 million, or 3.2%. Decisive in this regard was the growth in the Business Fields of Periodical Technical Inspection – due to an increase in testing volume, particularly in Spain and Germany – and Engineering & Type Approval. In the Business Field of Periodical Technical Inspection, smaller acquisitions in Germany had a positive impact – particularly the acquisition of SVK Sachverständigenkontor GmbH in the state of Saarland. The Rail Business Field, however, reported a slight decrease in revenues year-over-year, owing to difficult market conditions, particularly in the IMEA region and in Mexico. Significant growth impetus outside Germany can be seen from the regions of Asia Pacific as well as Central and Eastern Europe.

The **Products Business Stream** again recorded significant growth in terms of revenues, growing by €34 million, or 7.0%. Holding exchange rates constant, there was growth here of €40 million, or 8.2%. In 2016, particularly in the Business Fields of Electrical (safety and quality testing of electronic products), Solar/Fuel Cell Technology (photovoltaic and solar testing services), Softlines (testing of cosmetics, toys, textiles and much more) as well as Medical (certification of medical products), this Business Stream reported strong growth impulses; the Commercial (safety testing for machinery and systems, components, control systems, garden equipment, etc.) and Hardlines (testing of mechanical products, including household products, furniture and tool testing) Business Fields also reported higher revenues year-over-year. Growth in the Products Business Stream was seen in Germany, but primarily in the Greater China, IMEA and Asia Pacific regions.

In the **Academy & Life Care Business Stream**, revenues grew significantly by €14 million, or 6.8%; this was mainly due to the encouraging development in the Labor Market Services & Private Schools Business Field and in the Further Training & HR Development Business Field. Particularly in the area of IT education and further education, the trend in the open-market seminar business fell well short of expectations, but this was more than offset. The Occupational Health & Safety Business Field managed to boost its revenues by 5.8% through placement of a variety of new products. For this Business Stream, which is traditionally active in Germany, foreign markets – such as the markets in IMEA (in this case specifically India) and Greater China – are continuing to gain in significance. Even stronger revenue growth in Saudi Arabia in the field of training was not seen, due to continuation of relatively low oil and gas prices.

The **ICT & Business Solutions Business Stream** reported a slight decrease in revenues, in the amount of €2 million, or 1.5%. The IT Services & Cyber Security Business Field reported encouraging development and was able to increase its revenues by 2.4%. This trend is mainly driven by strong revenue growth from the hardware and software provisioning in Germany. At the same time, the Telco Solutions & Consulting Business Field reported a decline in

revenues; this led to a decrease in revenue for the Business Stream as a whole. In 2016, the ICT & Business Solutions Business Stream outside of Germany was particularly active in the United States.

The **Systems Business Stream** reported revenue growth of 2.5%. Adjusted for currency translation effects, the Systems Business Stream grew by €8 million, or 5.2%, in the Certification of Management Systems and, particularly, the Customized Services Business Fields. Growth impulses were once again primarily seen in the Customized Services Business Field, in which the Group offers services, among others, related to sustainability, compliance, service quality, and data privacy. Growth of 31% was reported here. Revenues in the Certification of Management Systems Business Field, however, declined slightly due to difficult market conditions. Internationally, revenues were higher particularly in the Greater China and Asia Pacific regions.

In Germany, the German Business Streams achieved 3.0% growth overall. Products, Mobility and ICT & Business Solutions recorded the highest rates of growth.

With a total of €900 million in revenue, the Group's international subsidiaries grew slightly compared to the previous year. Adjusted for exchange rates, this figure actually stands at €922 million, equal to growth of 3.4%. As such, adjusted for exchange rates, 50.8% of the Group's revenues were earned either internationally or with international customers. The main drivers for growth were the Greater China, IMEA and Asia Pacific regions.

## Development of Income

### EARNINGS BEFORE INTEREST AND TAXES (EBIT)

in € millions

2016	122.6
2015*	91.3
2015	101.4
2014	110.2
2013	117.1
2012	113.2

in € millions	2015*	2016
<b>Earnings before interest, taxes, depreciation, and amortization (EBITDA)</b>	160.3	193.4
Amortization of intangible assets and depreciation of property, plant, and equipment	-69.0	-70.8
<b>Earnings before interest and taxes (EBIT)</b>	91.3	122.6
Financial result	-17.2	-18.4
<b>Earnings before tax (EBT)</b>	74.1	104.2
Taxes	-35.9	-38.2
<b>Consolidated net income</b>	38.2	66.0

\* Adjusted.

At €193.4 million, earnings before interest, taxes, depreciation, and amortization (EBITDA) are significantly higher than the previous year's total of €160.3 million.

Earnings before interest and taxes (EBIT) and earnings before tax (EBT) turned out significantly higher than the previous year and are in line with budgeted figures, improving year-over-year by 34.3% and 40.6%, respectively.

The Products, Industrial Services and Mobility Business Streams and, to a lesser extent, the Academy & Life Care Business Stream, significantly outperformed the previous-year values. This stands in contrast to a slight decline in earnings in the ICT & Business Solutions and Systems Business Streams. Overall, however, EBIT surpassed the previous year's value by €31.3 million.

In the **Industrial Services Business Stream**, the Project Management Business Field was able to maintain the previous year's earning level in spite of the difficult environment of the crisis in Brazil. Restructuring measures introduced during the previous year, essentially including a significant reduction in capacity, were continued in this Business Field. Earnings for the Pressure Equipment Business Field also remained flat year-over-year, due particularly to stiffer competition accompanied by price and margin pressures. In contrast, the Electrical Engineering & Automation and Industrial Inspection Business Fields each reported a significant increase in earnings, ultimately more than offsetting the negative influences in the Business Stream. The earnings situation in the Infrastructure & Civil Engineering Business Field was very encouraging as well.

Earnings in the **Mobility Business Stream** were markedly higher year-over-year in the Periodical Technical Inspection Business Field, as was also the case in the Car Services & Appraisal and Engineering & Type Approval Business Fields. These positive results were able to markedly counter declining earnings in the Rail Business Field.

The **Products Business Stream** reported significant earnings increases in the Business Fields of Solar/Fuel Cell Technology and Medical, particularly in China and the Gulf States. The Electrical Business Field, on the other hand, faced a slight decline in earnings.

In the **Academy & Life Care Business Stream**, all of the Business Fields were able to report earnings growth.

In the **ICT & Business Solutions Business Stream**, earnings effects were positive overall, both in the Telco Solutions & Consulting and in the IT Services & Cyber Security Business Fields.

The Customized Services Business Field in the **Systems Business Stream** reported a largely stable earnings trend, but earnings in the Certification of Management Systems Business Field were slightly lower year-over-year. The latter was due particularly to intensified competition in the German market.

Developments in exchange rates had an overall negative impact on EBIT in a total amount of around €2 million.

Purchased services expressed as a share of total revenues went from 16.6% to 16.1% year-over-year.

The share of personnel expenses – in relation to revenue – declined, going from 56.4% the previous year to 55.7% in 2016.

At 21.4%, the percentage of other expenses falls short of the previous year's figure (22.5%).

Other operating income fell, from 4.1% of revenue the previous year to 3.3% in the year under report. In addition to a large number of individual items, the decrease also involves the change of a liability from variable purchase price components during the previous year.

The change in financial result owed mainly to a slight increase in interest on loans and a €0.4 million increase in interest on pension liabilities. At €104.2 million, earnings before taxes are considerably higher than the previous year's level of €74.1 million by 40.5%.

Of the €38.2 million in income taxes (previous year: €36.0 million), €23.0 million was accounted for by foreign countries. The tax rate decreased from 48.5% the previous year to 36.7% in the year under report. The reduction in the tax rate is mainly due to earnings contributions from countries with comparatively lower tax rates; these more than made up for burdens on earnings in foreign companies for which no deferred tax assets were created.

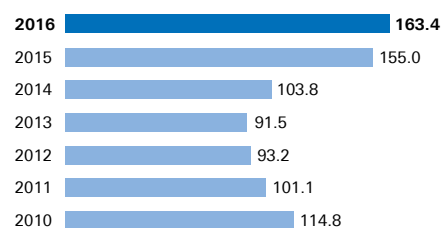
Consolidated net earnings increased by 72.9% and went from €38.2 million to €66.0 million.

### Financial Position

The cash flow statement was prepared on the basis of the consolidated financial statements.

#### CASH FLOW FROM OPERATING ACTIVITIES

in € millions



Cash flow from operating activities was considerably higher year-over-year, rising to €163.4 million from the previous year's value of €155.0 million (+5.4%). The reason for this, in addition to the consolidated net earnings, is the consistent net working capital management, which – despite business expansion – led to receivables at the previous year's level, while liabilities increased at the same time.

In 2016, after taking asset disposals into account, investments (including the increase in reinsurance policies) led on balance to a €97.4 million net outflow of funds. Compared to the previous year, cash flow from investing activities was affected particularly by the reduced volume of corporate acquisitions and by increased investments in property, plant and equipment at the location in Cologne.

In the area of financing activities, the repayment of current liabilities to banks in Germany and abroad exceeded the taking-out of current bank liabilities by €18.7 million. After paying out dividends to the shareholder, cash flow from financing activities totaled to €37.3 million.

Cash and cash equivalents as of December 31, 2016 totaled €237.3 million; as financial liabilities decreased to €275.8 million, net financial liabilities stood at €38.5 million (previous year: €93.5 million). This significant change year-over-year is primarily associated with the significantly improved earnings and further optimized working capital management.

The dynamic debt-equity ratio, which specifies the length of time required to repay the Group's financial liabilities, was around 1.4 years in relation to EBITDA.

To ensure its ongoing solvency, the TÜV Rheinland AG Group maintains extensive current and non-current lines of credit, of which €284 million was used as of December 31, 2016.

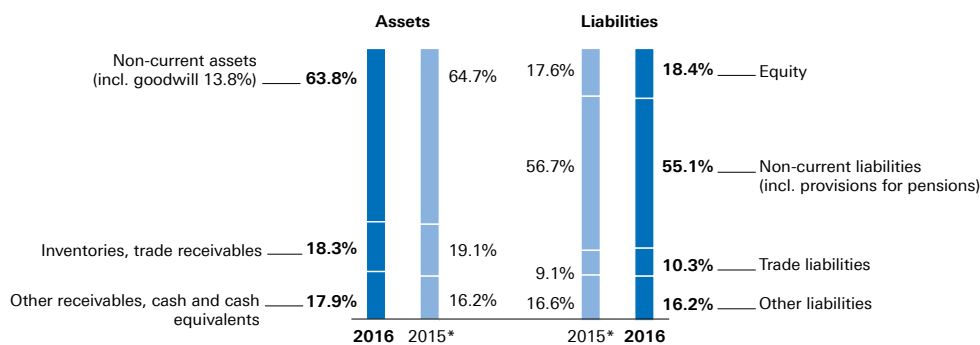
In support of the Group's strategic goals, the levels of investment planned for 2017 are comparable to those seen in 2016. As of the reporting date, besides additional investments for the renovation of Group headquarters in Cologne, there are particularly investment obligations for laboratories, testing facilities and software. These also include obligations that were not legally binding as of the reporting date. The bulk of the planned financing for these measures will be provided using funds that are already available.

**Balance Sheet and Capital Structure**

The balance sheet total is slightly higher, climbing by 4.4%, or €78.8 million, to €1,878.4 million.

Non-current assets were higher, rising by 2.8%, or €32.6 million. In the case of intangible assets, net investments amounting to €16.2 million (€3.7 million of which in goodwill) led to an increase that contrasted with €18.5 million in depreciation and amortization as well as with €2.4 million in currency effects. €75.5 million in net investments in fixed assets as well as currency changes of €2.7 million were accompanied by depreciation totaling €52.3 million. Deferred tax assets were €13.2 million higher on the year.

**BALANCE SHEET AND CAPITAL STRUCTURE**



\* Adjusted.



Current assets rose by €46.2 million, mainly as a result of an increase in cash and cash equivalents in the amount of €36.3 million as well as other receivables and other assets amounting to €9.4 million. The sum of inventories and trade receivables was slightly higher year-over-year, increasing by €1.8 million.

Total equity increased by €28.4 million and went from €317.8 million to €346.2 million. Main factors in this were the positive addition from consolidated net income in the amount of €66.0 million, contrasting with the increase in actuarial losses in the amount of €33.2 million that resulted from a decrease in the interest rate from 2.25% to 1.75% for the discounting of pension provisions. The dividend for the 2015 financial year amounting to €12.0 million, which was distributed to the shareholder TÜV Rheinland Berlin Brandenburg Pfalz e.V., reduced equity. Additional changes, such as effects from currency translation as well as deferred taxes, increased equity by a total of €7.6 million.

This improved the equity ratio, companion to a balance sheet total that was 4.4% higher, from 17.7% to 18.4%.

If there were external financing of pension obligations under a »Contractual Trust Agreement« (CTA) trust model, the equity ratio of the TÜV Rheinland AG Group would be almost 22%.

Within non-current liabilities, pension provisions increased by €25.9 million, to €742.4 million, mainly because of the lowering of the discount rate by 50 basis points. By contrast, other non-current liabilities were €10.4 million lower; this decrease is essentially the result of the change in variable purchase price components in connection with the acquisition of Risktec in 2014, as well as a repayment of liabilities to banks.

The €35.4 million increase in current debt was the result of increased trade liabilities as well as increased other current liabilities and current provisions. This contrasts with a €16.5 million reduction in current financial liabilities.

Non-current asset cover – defined as the sum of equity and non-current liabilities in relation to non-current assets – amounted to 115.3%.

### Investments

The volume of investments in the business year, not including corporate acquisitions, totaled €92.8 million.

The TÜV Rheinland AG Group is underscoring the importance of its largest location in Germany with continuation of the extensive new construction and refurbishing measures on the grounds of the Group's headquarters in Cologne. In 2016, this work particularly concerns the modernization of the main building. Among other things, the structural measures undertaken there will include the renovation of the façade, fire protection, heating and air conditioning as well as electrical installations. Around €22.6 million was invested in refurbishment of the main building in the year under review.

Furthermore, the Group made investments largely in laboratories, testing facilities and software.

For testing laboratories, in particular in the work areas of energy efficiency, EMC (electromagnetic compatibility), photovoltaics and chemical inspections, substantial investments were made in the total amount of €5.1 million. Asia Pacific and Greater China were the regions of focus. Expansion of the laboratory network for Softlines, Chemicals and Electrical in the growth markets of the TÜV Rheinland Group is of particular strategic importance in this context.

The Mobility Business Stream also invested around €6.3 million in expanding and improving the level of equipment in the network of motor-vehicle testing authorities. The major investment in the construction of three new test stations and in the extensive modernization of four other testing authorities in the greater metropolitan area of Santiago de Chile, which begun in 2014, was completed in 2016. The total amount invested for this purpose stood at around €1.1 million in 2016. More capital expenditures were made for the construction and conversion of a training center for test engineers and experts in Düren.

Another investment focus in 2016 was on expanding and strengthening the IT infrastructure, and on acquiring highly specialized testing software and technology. Investment measures totaling around €6.9 million were carried out for software and hardware. The performance of the IT infrastructure was strengthened, particularly through investments in improved hardware, targeted increases in server capacity and higher-performing telecommunications equipment. In the Mobility Business Stream, investments were made in implementing new testing and inspection software as well.

## EMPLOYEE REPORT

As of the end of the year 2016, a total of 19,649 employees (full-time) are employed at TÜV Rheinland AG Group. The average number of employees held steady during the reporting year; the ranks of employees were slightly higher year-over-year, rising from 19,630 the previous year to 19,671.

The average workforce size abroad stands at 11,385; this corresponds to a share of around 58%. The number of employees abroad fell slightly in a year-over-year comparison, by 1.7%. The average number of employees in Germany, by contrast, increased from 8,043 to 8,286 during the financial year under report (+3.0%).

The overall change in workforce size is due, among other things, to steep staff reductions in Brazil as a result of the economic situation in that country. In the IMEA region, there was workforce growth, due to the favorable business trend as well as acquisitions in the Maghreb.

## TOTAL STAFF (ANNUAL AVERAGE)

in FTE

2016	19,671
2015	19,630
2014	19,320
2013	17,947
2012	17,218

**Information in connection with the law mandating equal participation by men and women in management positions in the private sector and in civil service**  
Diversity is a focus in the sustainability strategy of TÜV Rheinland. In concrete terms, this means increasing the share of women in management positions within the Group from 12.8% in 2016 (previous year: 9.8%) to 15% in 2020 and to 20% of top management bodies internationally.

The target for the proportion of women in the Supervisory Board of TÜV Rheinland AG is 3/12 by June 30, 2017. The Supervisory Board has specified 20% as the proportion of women in the Executive Board at TÜV Rheinland AG.

The targets in the company's top level of management are 14% and 24%, which must be reached by June 30, 2017, and December 31, 2020, respectively. There is no second level of management in place at TÜV Rheinland AG.

Targets have been defined for the five German subsidiaries subject to quotas under the law mandating equal participation by men and women in management positions. These are set forth at the website: [www.tuv.com](http://www.tuv.com).

## RISK MANAGEMENT SYSTEM AND CORPORATE GOVERNANCE

For a globally active company like TÜV Rheinland, a comprehensive internal control system (ICS) – in relation to IT-assisted business processes and paired with effective and efficient risk management – is an indispensable control element which defines the framework for management and monitoring. The ICS is mainly intended to ensure compliance with statutory requirements, TÜV Rheinland-specific guidelines, and its corporate objectives.

In addition, risk management aims to identify and evaluate risks at an early stage, so that suitable precautions, controls, and safeguards can be put in place and proactive countermeasures can be initiated. TÜV Rheinland AG's Executive Board is responsible for shaping the Group's risk management system.

An explicit discussion in the management framework manual and a detailed description in the quality management system define the risk management process. These documents are available around the world on the company's intranet. An interdisciplinary risk unit has long been in place at TÜV Rheinland AG.

Multiple amendments to applicable laws and provisions were passed in recent years with the goal of further improving corporate governance. In keeping with international standards, the Corporate Sector Supervision and Transparency Act (KonTraG) requires the Executive Board to take suitable measures to ensure that developments which might pose a threat to the company's continued existence are identified at an early stage. This requirement is taken into account by an effective ICS and TÜV Rheinland's early risk warning system. Based on a risk-oriented audit approach, the Group's Corporate Audit Department checks the ICS of TÜV Rheinland companies around the world in accordance with international auditing standards.

Information derived from quarterly risk reporting by the Executive Vice Presidents is subject to detailed analysis in connection with the regions involved. Based on the information obtained in the matrix organization, all of this information is then aggregated into one report, which is appraised from portfolio and Group viewpoints. Risk determination is based on areas of risk that are specific to TÜV Rheinland. These areas comprise the categories market/customer, processes, employees, finances, accreditations/standards/regulatory framework and miscellaneous. Risk quantification is based on the anticipated impact on earnings as well as the likelihood of the risk's occurrence. Additionally, the naming of planned countermeasures also represents a central component.

Dealing with risks is also a part of the ongoing reporting process. Reporting follows the requirements of the matrix structure and, in addition to regularly updating the economic outlook, also takes business-specific early indicators into account. This forms an essential foundation for recognizing risks as well as introducing and consistently pursuing specific efforts to avert possible damage to TÜV Rheinland. In addition, the Executive Board is informed of significant circumstances by means of ad hoc disclosures. In the case of transactions that may have a significant impact on the performance of a Business Stream or Business Field, an approval process established worldwide provides transparency and reduces risk.

Risk management thus forms an integral part of the Group's standard planning, reporting, and control processes and is incorporated into TÜV Rheinland's information and communication system. It is continuously enhanced and adapted to changing framework conditions. Risk management is therefore suitable for identifying risks at an early stage that pose a threat to the Group's continued existence and for taking appropriate countermeasures.

The Group abides by the basic principles of good corporate governance, which place a focus on the legal and practical framework of managing and monitoring the company. In particular, the Group utilizes a professional compliance management system that is designed with prevention in mind and sets the relevant framework for TÜV Rheinland. Specifically, this framework includes the Code of Conduct, a compliance guideline, a guideline for avoiding conflicts of interest and corruption, a guideline for donations and sponsoring, and an external helpline for matters concerning compliance. An active worldwide network of compliance officers has been established who are available to our employees as competent points of contact.

TÜV Rheinland is convinced that good corporate governance is of great importance to its long-term success and that the implementation of and adherence to the corresponding guidelines play a key role in permanently strengthening the trust placed in the Group by all interest groups.

## VALUE MANAGEMENT AND BUSINESS-RELATED ENVIRONMENTAL AND SOCIAL FACTORS

The TÜV Rheinland AG Group is committed to conducting itself in accordance with the principles of the UN Global Compact and the IFIA (International Federation of Inspection Agencies). Specifically, this entails explicit consideration of human rights, labor standards, the concerns of environmental protection and the fight against corruption as well as the implementation of these in practice.

TÜV Rheinland systematically continued its activities in regard to social responsibility and sustainability during the 2016 financial year. TÜV Rheinland manages the topics of CSR and compliance on the basis of sustainability management and a compliance management system. Here, the sustainability strategy, which is linked to the corporate strategy, forms the substantive framework; with its five areas – governance, sustainable human resource management, efficient energy and resource consumption, social commitment, and service responsibility – it helps strengthen the key factors for success, thereby helping achieve the goal of becoming the world's best sustainable and independent service company in the field of testing, inspection, certification, consulting and training. The targets set for TÜV Rheinland in the areas of energy consumption, emissions, diversity and society were at the root of the substantive continuation of the program for CSR and sustainability again in 2016.

## OPPORTUNITY AND RISK REPORT

In connection with risk management, special attention is paid to opportunities and risks that are not explicit elements of planning. Important aspects result from TÜV Rheinland's global orientation and primarily relate to customers and markets as well as to legal and political framework conditions.

Opportunities are mainly associated with service innovations in individual Business Streams and Business Fields. Prominent examples of this are applications in the field of Non-Destructive Testing, as well as the biocompatibility of

medical products. Increased acquisition of major contracts, such as the monitoring of infrastructure projects together with the relevant delivery chains, offers further potential. Major opportunities also exist in the continued significant growth of international markets. These markets include the Gulf region, where additional potential is tapped through the continuously expanded presence as well as a continuous diversification of the spectrum of services offered. The resulting network, which will follow globalized value chains and client demand even more closely, forms one of the most important strategic pillars of TÜV Rheinland. The institutionalized, close coordination between business-specific and regional expertise results in additional opportunities – for example, in identifying new fields of activity as well as the effective and efficient handling of cross-border projects. Furthermore, reducing complexity and increasing standardization in all Business Streams open up areas of potential. In addition to optimizations in sales and administration, this includes pooling operations across national borders and the use of innovative IT applications according to customer wishes.

Major items arise out of the global orientation of TÜV Rheinland, specifically concerning customers and markets, the stability of political and social conditions, as well as international trade and financial systems together with their potential impact on the economy. The continued increase in geographical and service-related diversification has a risk-reducing overall effect in this regard. This makes it possible to cushion economic slowing such as that seen in China, or continuing challenges of the kind witnessed in Brazil. Changes in regulatory framework can result in a liberalization of markets. This can produce opportunities, but also risks, such as for the Governmental Inspections Business Field. Late issuance of accreditation, or its possible withdrawal, poses a risk as well. Measures for risk management focus on the quality of services, which forms a central element of corporate strategy. The point is also to prevent negative repercussions for the reputation of the TÜV Rheinland brand.



Possible strains can also stem from regulatory changes as well as sector-specific developments, such as changes in customer requirements and demand in the oil and gas sector, or in renewable energies. In addition to this, in various markets, there is also the challenge of finding skilled workers in numbers sufficient to enable further innovation and growth or qualifying personnel while avoiding high rates of turnover. This applies to specialized engineers and qualified IT personnel, among others. Continued consolidation in the TIC industry, combined with price and margin pressure as well as increasingly fierce competition, poses an ongoing challenge. One example of this phenomenon is the field of Periodical Technical Inspections in the Madrid region.

Risks may arise both from the company's own business activities and from external factors; in the case of breast implants of the French company Poly Implant Prothèse (PIP), for example, TÜV Rheinland is mentioned as the notified body in connection with conformity assessment procedures conducted pursuant to the European Medical Devices Directive. PIP continuously deceived the notified body TÜV Rheinland LGA Products GmbH (TRLP) by using, in some cases, a silicone gel for the production of the implants which was not approved for this purpose and was not covered by the certification by TRLP.

To date, the German courts have consistently confirmed that TRLP fulfilled the duties of a notified body responsibly and in compliance with all laws and legal norms applicable in Europe. In one case, the German Federal Court of Justice [Bundesgerichtshof – BGH] referred questions regarding the interpretation of the Medical Devices Directive to the European Court of Justice (ECJ) for a preliminary ruling.

In its judgment of 16 February 2017, the ECJ essentially confirmed TÜV Rheinland's legal view. In particular, it ruled that a notified body is under no general obligation to carry out unannounced inspections, inspect devices and/or examine the manufacturer's business records. Only if there are indications that a medical device does not meet the requirements set out in the Directive must the notified body follow-up upon these indications. On the basis of the answers provided by the ECJ, the German Federal Court of Justice will now continue to try the German Plaintiff's pending appeal on questions of law. To date, the German trial courts have consistently deemed that there were no indications of a lack of conformity.

TÜV Rheinland's legal view was also lastly declared correct in a judgment of the appellate court in Aix-en-Provence, France. The appellate court found that TRLP fulfilled its duties as the notified body in line with the applicable laws and norms and that the notified body had no indications of a lack of conformity. Only the commercial court in Toulon – in isolated first instance rulings – repeatedly issued deviating decisions and granted plaintiffs provisional claims to compensation. TÜV Rheinland has also lodged an appeal with the appellate court in Aix-en-Provence against the decisions issued recently in Toulon.

Furthermore, this matter is being addressed by France's highest civil court. TÜV Rheinland is confident that the views taken in the rulings to date will also be confirmed by these courts.

Using systematic risk management, the aforementioned risks can be made more manageable or the undesirable effects thereof weakened. Due to the integration of risk management into TÜV Rheinland's management information system, risk is controlled by appropriate evaluation consistently in all Business Streams and companies as well as at the Group level.

Targeted countermeasures are undertaken comprehensively at an early stage to minimize risks. This applies not only to market, customer and competition issues but also to internal processes in particular, such as systematic integration following M&A transactions. Continuous tracking of measures and updating of risk reports in the course of the year are obligatory. The Executive Board has set up a risk unit to which the Compliance, Controlling, Finance, Quality Management, Legal, Corporate Audit, and Insurance Divisions belong. Its task is to analyze and evaluate risks.

TÜV Rheinland counteracts liquidity risk by means of active financial management, the overriding objective of which is to ensure solvency at all times. Specifically, this includes systematic working capital and treasury management. The latter particularly includes implementing cash pooling and in-house banking. Financial derivatives are used to hedge currency and interest-rate risks. As of the reporting date, derivative financial instruments are of rather subordinate importance in terms of their volume and risk potential; a shift in the yield curve of +100 (-100) base points would change the market value of the interest-rate swaps by KEUR 1,489 (KEUR -1,489). Currency risks do not, for the most part, exist within the TÜV Rheinland AG Group because individual Group companies largely conduct their operational activities in their respective functional currencies. Currency risks resulting from operational business may be hedged by the use

of financial derivatives. The TÜV Rheinland AG Group held no significant currency derivatives as of the reporting date. Moreover, a fluctuation in the actuarial interest rate affects balance-sheet recognition of pension provisions and equity.

As far as possible, risks are hedged by taking out specific insurance coverage to minimize their financial consequences up to a defined deductible.

## OUTLOOK

### Future Economic Outlook: Forecast 2017 to 2018

#### EXPECTED ECONOMIC DEVELOPMENT

Region	2017	2018
Worldwide	Moderate growth	Moderate growth
USA	Stable, moderate growth	Stable, moderate growth
Europe	Slight growth	Slight growth
Germany	Sustained, moderate upturn	Sustained, moderate upturn
BRICS	Heterogeneous growth	Heterogeneous growth

The global economy will experience moderate growth in 2017 and 2018. The economic experts at the International Monetary Fund forecast an overall increase in global gross domestic product of 3.4% for 2017. An overall stimulating effect will come from the sustained expansionary monetary policy, increasing impetus from fiscal policy and a gradual acceleration in wage growth.

The United States is expected to achieve stable growth on the basis of the positive situation in the labor market as well as the plans of the new US administration with regard to lowering corporate and personal income tax. Weak growth in the economy is forecast for the Eurozone. Despite the slight, short-term negative economic effects of »Brexit,« it remains to be seen how the political and economic relationship between the UK and the Eurozone will develop. Germany will be in a position to continue the upturn seen in recent years. The economic engine in Germany will be fueled particularly by outlays for private and state consumption, as well as the robust state of the labor market. On the whole, Asian economic output will grow at a robust rate. Nevertheless, a sustained slowdown in the high rates of growth is forecast for the Chinese market. Economists are forecasting sustained high economic dynamics for India, on the other hand. Given the slightly positive trend in oil prices, the economic situation is improving in Brazil and Russia. Still, the rates of growth there are expected to be moderate initially.

Assessments of developments in the global and country-specific economies are, however, based on a series of key factors. Risks are seen particularly when unexpected developments occur. Consequently, political uncertainties in the United States and Europe, an unexpected deterioration in the Chinese economy or upheavals in global financial markets could lead to a lowering of expectations. Sustained geopolitical tensions or an existing threat of terror could hamper the global economy as well.

### TÜV Rheinland AG Group Outlook

All in all, the TÜV Rheinland AG Group anticipates organic revenue growth in the mid-single-digit percentage range in 2017. Germany's share in this development will total to around 50%. The following macroeconomic assumptions have been factored into planning for 2017:

- Moderate upturn in growth, led by the United States.
- Eurozone: continued weak economic dynamics.
- China: stable growth in 2017, but increased medium- and long-term risks.
- Emerging markets: recurring risks despite moderate upturn in growth.
- Trend toward slightly higher oil and commodity prices.
- An essentially firmer US dollar.

The number of employees is expected to increase in 2017, from 19,671 to 20,300. Workforce reductions will depend on the Group's business success, and on the launched excellence projects, and will be disproportionately low compared to the increase in revenue. Approximately 60% of the employees are expected to be employed outside of Germany in 2017.

The Group Executive Board and Supervisory Board have approved significant outlays in 2017 around the issues of innovation and digitalization as a means to enhance the future viability of the TÜV Rheinland AG Group. Against this backdrop, a stable to moderately upward-trending EBIT margin is expected for 2017, up to a value of 6.5%.

Due to developments in Brazil and trends in the oil and gas sector, full stabilization is not yet forecast for international **Industrial Services business** in 2017. In light of solid market trends in Germany and opportunities in the growth regions (Middle East, Greater China), in 2017 it can be expected that the further decline in revenue in Brazil and the resulting losses can be more than offset, with an overall increase in margin as a consequence.

For the **Mobility Business Stream**, following moderate revenue growth in 2016, stronger growth is expected again in 2017. Particular contributors to this are the Business Fields of Car Services & Appraisal as well as Rail, which is also developing positively internationally.

The **Products Business Stream** anticipates a significant increase across all Business Fields again in 2017. This applies to business in Germany as well as the international regions. After IMEA, North America and Greater China also continue to anticipate clear revenue growth. Growth will increase in nearly all of the Business Fields, particularly in Softlines, Solar and Medical. Expansion in the capacity for the testing of wireless communications technologies will move forward as planned, with a focus on Asia and Europe.

The **Academy & Life Care Business Stream** expects moderate growth in revenue volume in 2017. Focuses for growth are the areas of personnel certification, digital learning formats, and occupational health and integration management. In addition to revenue growth, the freelance training business in Germany is forecast to contribute significantly to earnings as well.

Operating in a continued positive environment, the **ICT & Business Solutions Business Stream** expects revenue growth for 2017 in the mid-single-digit percentage range. Following the arrival of the new Business EVP for the ICT & Business Solutions Business Stream, a revision of strategy and planning will take place at the beginning of 2017. The IT Services & Cyber Security Business Field continues to suffer from the high demand for IT experts by industry and the competition. This hampers growth.

The planning for the year 2017 assumes that the revenue and margin weakness in the **Systems Business Stream** in Germany experienced in the financial year under report can be overcome through tighter operational and commercial control, coupled with a sales offensive. Against this backdrop, an improvement in the earnings situation is forecast for 2017 in the Business Fields of Certification of Management Systems and Customized Services. This means that the yield level seen in previous years can be reached again in 2017. The new Government Inspections & International Trade Business Field will make a significant contribution toward an increase in revenue and earnings in the Systems Business Stream.

Cologne, March 30, 2017

#### Executive Board

**Dr.-Ing. Michael Fübi**  
Chief Executive Officer

**Thomas Biedermann**  
Chief Human Resources Officer  
and Director of Industrial Relations

**Vincent Giesue Furnari**  
Chief Financial Officer

**Ralf Scheller**  
Chief Operating Officer

**Stephan Schmitt**  
Chief International Officer



## INCOME STATEMENT

In '000 €	2015 adjusted	2016
<b>Revenues</b>	<b>1,880,970</b>	<b>1,917,886</b>
Inventory changes	378	-286
Cost of purchased services	-313,062	-309,180
<b>Operating performance</b>	<b>1,568,286</b>	<b>1,608,420</b>
Personnel expenses	-1,061,857	-1,067,871
Amortization of intangible assets and depreciation of property, plant, and equipment	-68,963	-70,821
Other expenses	-423,566	-410,901
Other income	77,386	63,738
<b>Operating result</b>	<b>91,288</b>	<b>122,564</b>
Interest income	9,318	9,902
Interest expenses	-25,874	-28,035
Other financial result	-591	-227
<b>Financial result</b>	<b>-17,147</b>	<b>-18,360</b>
<b>Earnings before tax</b>	<b>74,140</b>	<b>104,204</b>
Income taxes	-35,972	-38,197
<b>Consolidated net income</b>	<b>38,169</b>	<b>66,007</b>
Thereof attributable to:		
TÜV Rheinland Aktiengesellschaft equity holders	30,489	57,216
Non-controlling interests	7,679	8,791
<b>Earnings per share (in €)</b>	<b>871</b>	<b>1,635</b>

## BALANCE SHEET

In '000 €	12-31-2015 adjusted	12-31-2016
<b>Assets</b>		
Intangible assets	332,491	327,749
Property, plant, and equipment	445,824	471,716
Investments accounted for using the equity method	2,971	2,302
Other financial assets	287,298	289,314
Other non-current assets	15,423	12,322
Deferred tax assets	80,159	93,328
<b>Non-current assets</b>	<b>1,164,166</b>	<b>1,196,731</b>
Inventories	2,993	3,742
Trade receivables	339,424	340,522
Income tax receivables	13,960	12,631
Other receivables and other current assets	78,161	87,561
Cash and cash equivalents	200,970	237,252
<b>Current assets</b>	<b>635,507</b>	<b>681,708</b>
<b>Total assets</b>	<b>1,799,673</b>	<b>1,878,439</b>
<b>Equity and liabilities</b>		
Issued capital	35,000	35,000
Capital reserves	23,802	23,802
Other reserves	235,708	260,677
Non-controlling interests	23,285	26,762
<b>Equity</b>	<b>317,795</b>	<b>346,241</b>
Provisions for pensions and similar obligations	716,470	742,418
Other non-current provisions	14,976	17,159
Non-current liabilities	270,041	257,403
Deferred tax liabilities	17,595	17,056
<b>Non-current liabilities</b>	<b>1,019,081</b>	<b>1,034,036</b>
Current provisions	81,645	89,590
Income tax liabilities	3,830	9,862
Trade liabilities	163,680	193,018
Other current liabilities	213,642	205,692
<b>Current liabilities</b>	<b>462,797</b>	<b>498,162</b>
<b>Total equity and liabilities</b>	<b>1,799,673</b>	<b>1,878,439</b>

# INDEPENDENT ASSURANCE REPORT<sup>1</sup>

To the Executive Board of TÜV Rheinland AG, Cologne

We have performed an independent limited assurance engagement on the selected qualitative and quantitative sustainability information in the chapter »Corporate Social Responsibility« in the Corporate Report 2016 (further: »Report«) for the business year 2016 of TÜV Rheinland AG, Cologne (further: »TÜV Rheinland«).

It was not part of our engagement to review service related information, references to external information sources, expert opinions and future-related statements in the Report.

## MANAGEMENT'S RESPONSIBILITY FOR THE REPORT

The legal representatives of TÜV Rheinland are responsible for the preparation of the Report in accordance with the principles and standard disclosures of the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative, in combination with internal guidelines, as described in the section »About this report« (further: »Reporting Criteria«).

This responsibility includes the selection and application of appropriate methods to prepare the Report and the use of assumptions and estimates for individual qualitative and quantitative sustainability disclosures which are reasonable under the circumstances. Furthermore, this responsibility includes designing, implementing and maintaining systems and processes relevant for the preparation of the Report in a way that is free of – intended or unintended – material misstatements.

## INDEPENDENCE AND QUALITY ASSURANCE ON THE PART OF THE AUDITING FIRM

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA-Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

The quality assurance system of the KPMG AG Wirtschaftsprüfungsgesellschaft is based on the International Standard on Quality Control 1 »Quality Control for Audit, Assurance and Related Service Practices« (ISQC 1) and, in addition on national statutory requirements and professional standards, especially the Professional Code for Certified Accountants as well as the joint statement of WPK (Chamber of Public Accountants) and IDW (Institute of Public Auditors in Germany): Requirements for quality assurance in the auditing practice (VO 1/2006).

## PRACTITIONER'S RESPONSIBILITY

Our responsibility is to express a conclusion based on our work performed and the evidence obtained on the qualitative and quantitative sustainability disclosures included in the scope of this engagement.

## NATURE AND EXTENT OF THE ASSURANCE ENGAGEMENT

We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): »Assurance Engagements other than Audits or Reviews of Historical Financial Information« and the International Standard on Assurance Engagements (ISAE) 3410: »Assurance Engagements on Greenhouse Gas Statements« of the International Auditing and Assurance Standards Board (IAASB). These standards require that we comply with our professional duties and plan and perform the assurance engagement to obtain a limited level of assurance to preclude that the information above is not in

<sup>1</sup> Our engagement applied to the German version of the Corporate Report 2016. This text is a translation of the Independent Assurance Report issued in German language, whereas the German text is authoritative.

accordance, in all material respects, with the aforementioned Reporting Criteria. In a limited assurance engagement the evidence gathering procedures are more limited than in a reasonable assurance engagement and therefore less assurance is obtained than in a reasonable assurance engagement. The choice of audit activities is subject to the auditor's own judgement. This includes the assessment of the risk of material misstatement in the Report under consideration of the Reporting Criteria.

Within the scope of our work, we performed amongst others the following procedures when conducting the limited assurance engagement:

- A risk analysis, including a media search, to identify relevant information on TÜV Rheinland's sustainability performance in the reporting period.
- Evaluation of the design and implementation of the systems and processes for the collection, processing and control of qualitative and quantitative sustainability disclosures included in the scope of this engagement, including the consolidation of the data.
- Interviews with personnel on group level responsible for providing the data and information, carrying out internal control procedures and consolidating the data and information.
- Evaluation of internal and external documentation, to determine whether the sustainability disclosures are supported by sufficient evidence.
- An analytical review of the data and trend explanations submitted by all subsidiaries for consolidation at group level.
- Visits to the corporate headquarters in Cologne, Germany and video conference with the subsidiary TÜV Rheinland Inspection Services (Pty) Ltd. (South Africa) to assess local data collection and reporting processes and the reliability of the reported data.
- Evaluation of the overall presentation of the selected qualitative and quantitative sustainability disclosures included in the scope of this engagement.

## CONCLUSION

Based on the procedures performed and evidence received, nothing has come to our attention that causes us to believe that the selected qualitative and quantitative sustainability information in the chapter "Corporate Social Responsibility" for the business year 2016, published in the Report, are in all material respects not prepared in accordance with the Reporting Criteria.

## RECOMMENDATION

Without affecting the conclusion presented above, we recommend TÜV Rheinland to further formalize the data collection processes and to extend the scope of collected data within Germany and worldwide.

## PURPOSE OF THE ASSURANCE REPORT

This assurance report is issued based on an assurance engagement agreed upon with TÜV Rheinland. The assurance engagement to obtain limited assurance is issued on behalf of TÜV Rheinland and the assurance report is solely for information purposes of TÜV Rheinland on the results of the assurance engagement.

## LIMITED LIABILITY

This assurance report must not be used as basis for (financial) decision-making by third parties of any kind. We have responsibility only towards TÜV Rheinland. We do not assume any responsibility for third parties.

Frankfurt am Main, April 12, 2017

KPMG AG  
Wirtschaftsprüfungsgesellschaft  
(Original German version signed by:)

**Fischer**  
Wirtschaftsprüferin  
(German Public Auditor)

**Glöckner**  
Wirtschaftsprüfer  
(German Public Auditor)



## ABOUT THIS REPORT

In 2016, the TÜV Rheinland Corporate Report once again contains the Financial Report and the Sustainability Report. The Corporate Report is based on the internationally recognized IFRS and Global Reporting Initiative (GRI) reporting standards, the principles of the UN Global Compact, as well as the anti-corruption guidelines of the UN and Transparency International, and encompasses the consolidated companies that are also included in the consolidated financial statements.

The present TÜV Rheinland Sustainability Report was compiled »in accordance« with the GRI G4 guidelines – »Core« option. The GRI content index lists which GRI guideline criteria were used in TÜV Rheinland's 2016 Corporate Report. Our reporting activities are also carried out in accordance with the COP Advanced Level of the UN Global Compact.

The most recent previous Corporate Report was published in April 2016. The Corporate Report will continue to be published on an annual basis in the future.

### METHODOLOGY USED IN THE REPORT

The reporting period is the 2016 business year. If, at the time of publication (deadline: March 29, 2017), certain final figures for 2016 were not yet available, comparable annual figures from 2015 were used.

### ENVIRONMENTAL INDICATORS

#### German companies:

Since the 2013 reporting year, data collection has been limited to 29 main locations, covering approx. 65% of employees in 2016. The data collected were then projected for the entire workforce in Germany, and the figures were rounded up or down. Headcount-based figures were applied for this purpose. Other bases for calculation are stated separately. Several figures were newly aggregated and calculated with average figures for the year. Although some details are lost in the process, it permits reliable long-term comparisons and goals to be formulated. Estimates and assumptions are identified as such.

#### Foreign subsidiaries:

To achieve global coverage of key figures relevant to environmental impact, data were collected from all seven TÜV Rheinland regions. Each of the foreign subsidiaries with an environmental management system or more than 50 employees was considered at the company level. This resulted in data collection that allowed us to cover at least 51% (passenger car utilization) for our foreign subsidiaries. With regard to key environmental figures (such as air travel and electricity consumption), the figures even cover 82% and 89% of employees, respectively. The data collected were then projected for the entire workforce of the foreign subsidiaries, and the figures were rounded up or down accordingly. In this context, the annual average FTE (full-time equivalent) value was used. Other bases for calculation are stated separately.

### KEY EMPLOYEE FIGURES

For ease of reading, we consistently use the term »employees« with reference, of course, to all female and male colleagues. Furthermore, unless identified as headcount-based figures, all disclosures on employee structure are based on FTE (full-time equivalent) figures. Both types of disclosure represent closing-date disclosures (December 31, 2016), unless otherwise stated. The data collected covers 93% of the total.

## GRI G4 CONTENT INDEX

G4 Indicators and Description		Corporate Report and Web References	Comments
<b>STRATEGY AND ANALYSIS</b>			
G4-1	Foreword by the Chairman of the Board of Management	2–3	
G4-2	Key impacts, risks and opportunities	26, 28–30, 39–40, 46–48, 73–75	
<b>ORGANIZATIONAL PROFILE</b>			
G4-3	Name of the organization		TÜV Rheinland AG
G4-4	Primary brands, products and services	F2, 58–59, www.tuv.com	
G4-5	Location of organization's headquarters		Am Grauen Stein, 51105 Cologne, Germany
G4-6	Countries where the organization operates	60–61, 65–67, www.tuv.com	
G4-7	Nature of ownership and legal form	89–90	
G4-8	Markets	60–64, www.tuv.com	
G4-9	Scale of the organization	F1, 5, 45, 79, www.tuv.com	
G4-10	Total workforce	34, 45, 71	The workforce figures are not subject to seasonal variations. 86 percent of our workforce comprises permanent employees. 66 percent of those permanent employees are male. 52 percent of the employees with fixed terms are male.
G4-11	Employees covered by collective bargaining agreements		The compensation for about 71 percent (per-capita disclosures as of the reporting date on December 31, 2016) of our employees in Germany is subject to a collective bargaining agreement.
G4-12	Description of supply chain	34	
G4-13	Significant changes in the organization's size, structure or ownership	3, Essay 4–5, 36	Changes were made to the organizational structure during the reporting year.
G4-14	Explanation of how the precautionary principle is addressed	26, 71–75	
G4-15	Participation in and endorsement of externally developed charters, principles and initiatives	26	
G4-16	Important memberships	31, 73	

G4 Indicators and Description		Corporate Report and Web References	Comments
<b>IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>			
G4-17	All entities included in the organization's consolidated financial statements	<a href="http://www.tuv.com/en/corporate/about_us_1/sustainability_and_compliance/sustainability-compliance.html">http://www.tuv.com/en/corporate/about_us_1/sustainability_and_compliance/sustainability-compliance.html</a>	
G4-18	Process for defining the report content	26–29	
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G4-21	Material aspects outside the organization	29	
G4-22	Effects of any re-statements of information	82	
G4-23	Changes in the scope, boundary or measurement methods	82	
<b>STAKEHOLDER ENGAGEMENT</b>			
G4-24	Overview of stakeholder groups	27	
G4-25	Basis for identification of stakeholder groups	26	
G4-26	Engagement of stakeholder groups	29	
G4-27	Consideration of key concerns raised by stakeholder groups	27, 29	
<b>REPORT PROFILE</b>			
G4-28	Reporting period	82	
G4-29	Date of most recent previous report	82	
G4-30	Reporting cycle	82	
G4-31	Contact point	J3	
G4-32	GRI G4 Content Index	83–88	
G4-33	External assurance for the report	80–81	
<b>GOVERNANCE</b>			
G4-34	Governance structure of the organization	31–34	
<b>ETHICS AND INTEGRITY</b>			
G4-56	Values, principles and code of conduct	32–33, 71–75	
<b>ECONOMICS</b>			
	Management Approach	26, 28	
Economic Performance Indicators			
G4-EC1	Direct economic value generated and distributed	52–55, 65–67, 70–71, 78	
G4-EC3	Coverage of the organization's defined-benefit plan obligations	68, 70, 79	
Indirect Economic Impacts			
G4-EC8	Significant indirect economic impacts, including the extent of impacts	26–29	
Procurement Practices			As a service provider, purchasing products is less relevant and primarily concerns office supplies.

G4 Indicators and Description		Corporate Report and Web References	Comments
<b>ENVIRONMENT</b>			
	Management Approach	26, 28, 46–47	
Materials			
G4-EN1	Materials used	50	
Energy			
G4-EN3	Energy consumption within the organization	47, 50	We do not indicate any differentiation between renewable and non-renewable sources.
G4-EN5	Energy intensity	47, 51	
G4-EN6	Reduction of energy consumption	47–50	
Water			
G4-EN8	Total water withdrawal	50	
Biodiversity			
			As a service provider our business activities do not harm the environment any more than other urban development areas. Therefore, this aspect is not material.
Emissions			
G4-EN15	Direct greenhouse gas emissions – Scope 1	50	The GWP factors for EN15, EN16 and EN17 are derived from: <a href="http://ow.ly/ZgdPG">http://ow.ly/ZgdPG</a>
G4-EN16	Indirect greenhouse gas emissions – Scope 2	51	
G4-EN17	Other indirect greenhouse gas emissions – Scope 3	50	Our business activities produce only CO <sub>2</sub> emissions but no other relevant Greenhouse gas emissions.
G4-EN18	Greenhouse gas emissions intensity	47, 51	
G4-EN19	Reduction of greenhouse gas emissions	47–50	For some initiatives, the direct emissions savings cannot yet be quantified.
Effluents and Waste			
			When compared with classical industrial companies, we only produce negligible quantities of wastewater and waste in the provision of our services; that waste and wastewater is properly removed and disposed of.
Products and Services			
			As our services have only little environmental impact, this aspect was assessed as not material.
Compliance			
G4-EN29	Fines for non-compliance with environmental laws and regulations		We are not aware of any such breaches and resulting fines across the entire Group in the reporting year.
Transport			
G4-EN30	Significant environmental impacts of transporting products and other goods and materials, and transporting members of the workforce	49–51	Due to our business model, the data relate only to the transport of our employees.
Supplier Environmental Assessment			
			As a service provider, purchasing products is of minor significance. For that reason, supplier management was assessed as less relevant.
Environmental Grievance Mechanisms			
G4-EN34	Formal grievances about environmental impacts		No grievances were filed in the reporting year.



G4 Indicators and Description		Corporate Report and Web References	Comments
<b>LABOR PRACTICES AND DECENT WORK</b>			
Management Approach		26, 28, 36–37, 39	
Employment			
G4-LA1	Employee turnover	45	New employees and regional turnover rates are not recorded.
Occupational Health and Safety			
G4-LA5	Workforce representation in health and safety committees		In Germany, we evaluate the effectiveness of our occupational health and safety measures using, among other things, a network of Business-Stream-specific occupational safety committees (OSC). All of our employees in Germany are represented by these committees.
G4-LA6	Injuries, occupational diseases and work-related accidents	43	In the reporting year, no occupational diseases were reported in Germany. Records do not differentiate between men and women.
Training and Education			
G4-LA9	Training and Education	45	All of our employees have access to training and continuing education. Differentiation between men and women or between employee categories is of no relevance.
G4-LA10	Programs for skills management and lifelong learning	41–42	
G4-LA11	Regular performance and career development reviews		Every year, we have a discussion with our top-level managers in a so-called Management Review, which also examines, among other things, succession and potential candidates. In Germany, our employees in some areas have the possibility, in addition to the structured performance review, which is mandatory across all levels of the company, to participate in a goal agreement/performance evaluation meeting.
Diversity and Equal Opportunity			
G4-LA12	Composition of governance bodies	3, 45	All members of the Executive Board are male and German. Two members are between 30 and 50 years old, three members are over 50 years of age.
Equal Remuneration for Women and Men			
G4-LA13	Equal Remuneration for Women and Men		At TÜV Rheinland, an employee's wage is oriented on the employee's work activities, qualifications, and professional experience.
Supplier Assessment for Labor Practices			
As a service provider, purchasing products is of minor significance. For that reason, supplier management was assessed as less relevant.			
Labor Practices Grievance Mechanisms			
G4-LA16	Formal grievances about labor practices		No grievances were filed in the reporting year.

G4 Indicators and Description		Corporate Report and Web References	Comments
<b>HUMAN RIGHTS</b>			
Management Approach			Human rights issues are relevant for only a small portion of our business activities. Nonetheless, human rights are an integral part of our internal guidelines.
Non-Discrimination			
G4-HR3	Incidents of discrimination and actions taken		There were no allegations of discrimination in Germany during the reporting year.
<b>SOCIETY</b>			
Management Approach		26, 28, 52	
Local Communities			
G4-S01	Measures for local community engagement, impact assessments and development programs	52–55	To date, we have not conducted any impact analyses or environmental impact assessments.
Anti-Corruption			
G4-S03	Business units analyzed for risks related to corruption	33–34, 71–72	
G4-S04	Percentage of employees trained in anti-corruption policies and procedures	33	
G4-S05	Incidents of corruption and actions taken	34	
Anti-Competitive Behavior			
G4-S07	Legal actions for anti-competitive behavior		We are not aware of any legal actions taken against us for anti-competitive behavior in the reporting year.
Compliance			
G4-S08	Penalties for non-compliance with laws and regulations	34	
Supplier Assessment for Impacts on Society			
			As a service provider, purchasing products is of minor significance. For that reason, supplier management was assessed as less relevant.
Grievance Mechanisms for Impacts on Society			
G4-S011	Formal grievances about impacts on society		During the reporting year, a complaint was submitted and processed against TÜV Rheinland with the National Contact Point for the OECD Guidelines for Multinational Enterprises. Proceedings in the matter are ongoing.

G4 Indicators and Description		Corporate Report and Web References	Comments
<b>PRODUCT RESPONSIBILITY</b>			
	Management Approach	26, 28, 73	
Customer Health and Safety			
G4-PR1	Significant product and service categories for which health and safety impacts are assessed		Analyzing products and services with regard to their effects on health, safety, and the environment is TÜV Rheinland's core area of expertise. An overview of our services can be found at <a href="http://www.tuv.com">www.tuv.com</a>
Product and Service Labeling			
G4-PR4	Incidents of non-compliance with regulations and voluntary codes concerning product and service information		We are not aware of any incidents of non-compliance in the reporting year.
Customer Privacy			
G4-PR8	Complaints regarding customer data privacy		There were no legitimate complaints relevant to breaches of customer privacy or losses of customer data during the period under review. Our Group quality management system includes a data privacy management system. In that context, the first Group companies are already certified according to ISO 27001 (information security).
Compliance			
G4-PR9	Fines for non-compliance with laws and regulations concerning the provision and use of products and services		No significant fines for non-compliance with laws concerning the provision and use of products and services were issued.

We will publish the UNGC/TI Reporting Guidance on Anti-Corruption on our website, under the »Sustainability« rubric.

# ORGANIZATION OF TÜV RHEINLAND

TÜV Rheinland is organized in the form of a matrix with six global business areas and regionally in eight regions. The responsibility for results lies with the global heads of the Business Streams. The regional heads are the top representatives of TÜV Rheinland in the respective regions and coordinate activities there which concern all Business Streams. The heads of the Business Streams and of the regions prepare the content of important decisions of the Executive Board together; they reach agreement in the

Group Executive Council, the top operative management team of TÜV Rheinland AG under the Executive Board. The operational parent company is TÜV Rheinland AG, the shares of which are entirely in the possession of TÜV Rheinland Berlin Brandenburg Pfalz e.V. In accordance with Germany’s right of co-determination, employees are represented by staff representatives on the Supervisory and Management Boards.

## BUSINESS STREAMS



**Industrial Services**  
 Dr. Hans Berg



**Mobility**  
 Dr. Matthias Schubert



**Products**  
 Holger Kunz



**Academy & Life Care**  
 Markus Dohm



**ICT & Business Solutions**  
 Frank Luzsicza



**Systems**  
 Michael Weppeler

## REGIONS



**Western Europe  
 Central Eastern Europe**  
 Petr Lahner



**Asia Pacific  
 India, Middle East, Africa**  
 Andreas Höfer



**Greater China**  
 Yushun Wong



**North America**  
 Gerhard Lübken



**South America**  
 Martin Klaus Kunze

Version: April 1, 2017

## SUPERVISORY BOARD OF TÜV RHEINLAND AG

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Dipl.-Wirtsch.-Ing. Heinz-Werner Binzel, Langenselbold	Managing Director, Densys GmbH
Dr. jur. Hermann H. Hollmann, Cologne	Attorney
Prof. Dr. Michael Hüther, Cologne (from April 12, 2016)	Director and member of the Presidium, Cologne Institute for Economic Research
Dr. jur. Gerd Schäfer, Tribsees/Landsdorf	Attorney
Dr.-Ing. Rolf-Martin Schmitz, Essen	CEO, RWE AG
Prof. Dr.-Ing. Johann-Dietrich Wörner, Darmstadt (until April 12, 2016)	Director General, ESA – European Space Agency

### EMPLOYEE REPRESENTATIVES ON THE SUPERVISORY BOARD

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Andrea Becker, Düsseldorf	Regional Unit Officer for Special Services, ver.di-Landesbezirk NRW
Rechtsanwalt Jan Bley, St. Augustin	Divisional Director, TÜV Rheinland Aktiengesellschaft
Birgit Ladwig, Berlin	Director of the Office of the Chairman, ver.di-Bundesverwaltung
Dipl.-Pädagoge Gerhard Meusel, Cologne	Consultant, TÜV Rheinland Consulting GmbH
Dipl.-Ing. Johannes Scholz, Frechen	Qualified Expert, TÜV Rheinland Kraftfahrt GmbH



## EDITORIAL INFORMATION

### Editor

TÜV Rheinland AG  
Hartmut Müller-Gerbes  
Corporate Communications  
Am Grauen Stein  
51105 Cologne, Germany  
Phone +49 221 806-0  
Fax +49 221 806-114

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TÜV Rheinland AG  
Am Grauen Stein  
51105 Cologne, Germany  
[www.tuv.com](http://www.tuv.com)