

First we take measurements,  
then we take measures.





First we Take Measurements,  
then we Take Measures.

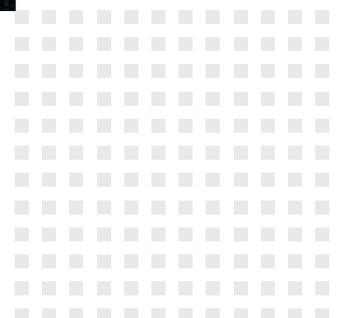
# International Cooperation. We Offer our Experience.

The Physikalisch-Technische Bundesanstalt (PTB), Germany's national metrology institute, has been providing services for more than 125 years. With 2,000 employees at its locations in Braunschweig and Berlin, PTB is a global player in the world of metrology.

For more than 50 years, PTB has shared its core competence in international development cooperation. It supports developing and emerging economies in the comprehensive field of quality infrastructure.

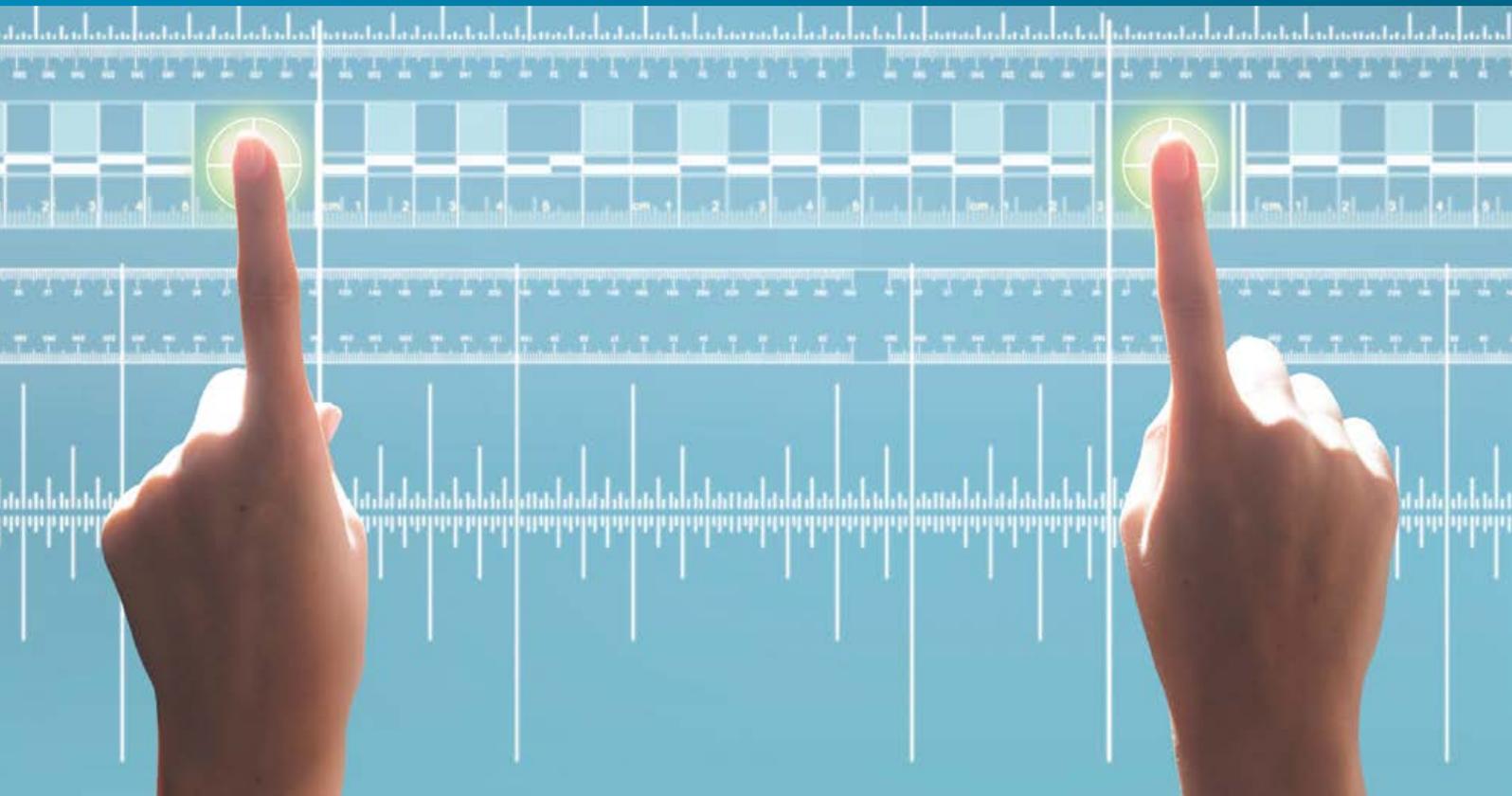
The outstanding effects of this cooperation are reflected in economic development and the strengthening of consumer protection. Furthermore, a functioning quality infrastructure is an essential prerequisite for the protection of the environment, the development of renewable energies and the establishment of a reliable health system.

PTB contributes to sustainable economic, social and ecological development. PTB is committed to the development policy of the German government and acts according to international goals (Sustainable Development Goals, Paris Declaration).



# Quality Made by PTB Germany.

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# Our Profile. Measurable Solutions.

As an internationally operating unit of a German federal authority, we work on behalf of the German government and for public international clients. Our work is not profit-oriented. We provide neutral advice.

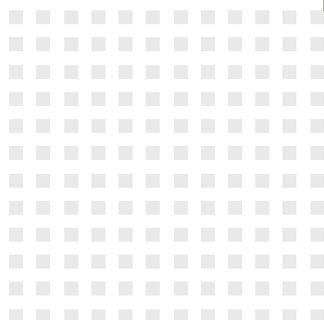
We support our partner countries in the development and implementation of a demand-oriented and internationally recognised quality infrastructure. In this context, national, regional and international networks where our partners are involved according to their priorities and competences play a key role.

In our partner countries, we advise governments and ministries, promote institutions of quality infrastructure and support small and medium-sized enterprises.

**Our solutions are a benefit to everyone.  
Quality, as we understand it, is a public good.**

Our approach is fair, systematic and demand-oriented. As an internationally recognised expert institution, we are part of a global network and are oriented towards international good practices.

**We see ourselves as a provider of stimulation  
and guidance – even in the long term.**



Technical Regulations  
legal stipulation



Standards  
customer demands



Supplier  
Producer  
Quality Management System



Conformity  
Assessment



Buyer  
Consumer



Certification



Testing



Metrology



Inspection



Accreditation



# Quality Infrastructure. A Complex Network.



Quality can be measured. It provides information about the degree to which products or services comply with existing requirements. The features are objective and measurable, and they are legally or contractually defined.

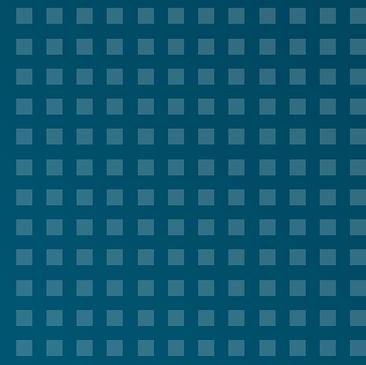
Proving compliance of products and services with national and international specifications requires a consistent network, known as quality infrastructure. It consists of various institutions that provide services for a state, for industry and for consumers.

Conformity assessments are based on a recognised quality management system. Industrial production requires measurement devices whose accuracy has been verified. Test laboratories are needed whose competence is confirmed. Those who offer calibration, inspection and certification services as well as those who grant accreditation must also prove their abilities. This all forms a complex system that is firmly linked to international standards.

Few developing countries can fulfil the professional and financial prerequisites on their own. Therefore, solutions with divided responsibilities are useful; if possible, they should be oriented towards the demand and the capacities of regional economic communities.

An internationally recognised quality infrastructure serves objectives in terms of safety, environment, health and consumer protection and, in developing countries and emerging economies, contributes to sustainable economic, ecological and social development.





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A Contribution to Promoting  
Employment and Reducing  
Poverty.

# Quality Infrastructure. Promotes Sustainable Economic Development.



Quality is important. This applies for small and medium-sized enterprises just as much as for internationally operating corporations and industries across all sectors. To meet the requirements of retailers, consumers and the state, businesses must rely on the services of institutions that provide quality infrastructure.

Existing protective regulations and standards support the quality of the goods produced. This is essential for market access and competitiveness. When processes and interfaces are improved, key conditions for production with divided responsibilities and efficient processes are created. A recognised quality infrastructure lowers transaction costs and promotes innovations.

The basic conditions for trade are defined on a national level and to an even greater extent on an international level, such as in the scope of the WTO Agreement on Technical Barriers to Trade.

In order to participate in globalised trade, developing countries and emerging economies must fulfil certain conditions with regard to their quality infrastructure. This fulfilment concerns compliance with regulations as well as the competence to participate in designing these regulations. Therefore, support for implementing trade agreements is as important as the initiation, strengthening and connecting of regional and international professional organisations. Harmonised standards and technical regulations, in addition to mutual acceptance of test procedures, stimulate the regional and global exchange of goods.

However, the strengthening of trade capacities and the increase in exports support sustainable economic development only if consumer protection is also maintained.



Protection of the Environment  
and Resources Requires Long-term  
and Reliable Measurements.



## Quality Infrastructure. Supports Ecological Sustainability.

Ideally, political action strategies are based on a reliable, internationally linked database. This is the basis for creating legal regulations and monitoring directives. Human life and nature can only be sufficiently protected if the competences necessary for controlling production processes and environmental pollution exist.

Effective use of renewable energies and increase of energy efficiency are impossible without a corresponding quality infrastructure. Adequate and internationally recognised measurement, testing, standardisation, accreditation and certification capacities are absent in many developing countries and emerging economies. The services provided are essential for implementing laws, directives and technical regulations.

Even before solar and wind power plants are installed, precise data for revenue and profitability prognoses are necessary. Without physical examination of the performance and quality of a product, there is a general risk that imported or locally manufactured products, such as solar power plants, will not provide the specified capacity or will even be faulty. Testing and measurement services play an important role for the increased efficiency and service life of solar systems.

Absolutely accurate transmission and energy measurement technology, development of new standards and harmonization of various technological requirements are necessary to feed electricity from renewable energies with little loss into the power grid.

A powerful quality infrastructure is one of the basic conditions for active participation of emerging economies and developing countries in dealing with national and global ecological challenges.

# Securing and Improving Social Performance.





## Quality Infrastructure. Ensures Sustainable Social Development.

### **Quality infrastructure helps people.**

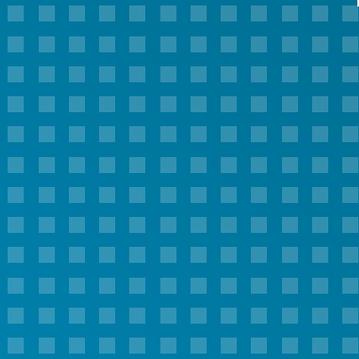
Medical technology uses a wide range of measuring instruments and analytical procedures. Diagnosis and therapy monitoring requires tested measuring devices that include clinical thermometers and blood pressure monitors as well as therapy dosimeters during the radiation of tumors. Medical laboratories are subject to special measures of quality management. Quality infrastructure is a contribution to the human right to health.

### **Fair competition is based on quality infrastructure.**

Commodity trading and services are based on measuring devices whose accuracy cannot realistically be checked by the consumer. Scales, filling pumps and taxi odometers are only a few examples. Furthermore, the increasing range of prepackaged goods requires verification of filling quantities; this includes products as varied as toothpaste and canned tuna, among many others.

### **Good governance requires quality infrastructure.**

The state is responsible for protecting its citizens and ensuring that traded goods and services comply with the protection provisions and values. This makes regular verification necessary. In addition, accountability in the scope of international agreements ensures transparency and legal certainty.



# Imprint

**Published by**

Physikalisch-Technische Bundesanstalt  
Bundesallee 100  
38116 Braunschweig  
Germany

**Responsible** | Dr. Marion Stoldt**Editorial staff** | Manuela Behrendt, Lea Zeppenfeld**Text** | Martin Kaiser, Lea Zeppenfeld**Design and implementation** | punkt4.eu**Photos** | PTB, gettyimages, cover: © vege – Fotolia.com,

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**Paper** | FSC-/PEFC-certified

As of April 2018





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