



# Shaping the future through standardization

– with DKE towards an all electric society

Standards benefit us all – affecting consumers, businesses, science and politics. They support innovations, facilitate trading as well as product safety. DKE is Germany's link to international standardization by IEC, CENELEC and ETSI as well as the official representative of national interests. For this decade of digitalization DKE will participate in shaping the future and thus offers partnership to the federal government and institutions of the European Union.

### DKE enables energy transition

The energy transition is a large-scale transformation project in which it is of paramount importance that different technologies interact smoothly. One important task of DKE is therefore to ensure that the various power generation plants can be connected to each other via interfaces in order to communicate with each other in a way that serves the system. A fundamental challenge is the integration of new technologies (such as artificial intelligence) into existing systems. Here, standardization offers guidance through use cases and architectures.

Standardization leaves its mark on this decade by enabling digitalization and energy transition. DKE's standards are necessary to meet requirements, avoid shortages and provide stable power management.

### DKE makes integrated energy a success

A genuine energy transition can only succeed if the sectors of the energy industry, which have so far tended to be viewed separately, are intelligently linked or coupled with one another. A key concern here is to drive forward the digitization of energy sectors through

data-based sector coupling. Smart and networked energy systems require interfaces and common data formats and architectures. Standardization enables the sectors to connect products and solutions both electrically and in terms of data technology, thus creating smart and intelligent management of the entire chain.

One aspect of sector coupling is "power to gas." With the help of surplus electricity, e.g. from wind energy, water is broken down into oxygen and hydrogen by electrolysis. Hydrogen has long been regarded as the energy carrier of the future because, unlike fossil fuels, it does not cause any harmful emissions when burned and can be fed into the existing gas grid, where it can in principle also be stored for long periods. This is where DKE standards on fuel cell technology come in, specifying requirements for safe operation and testing aspects.

DKE provides the appropriate platform for all the industries involved to make integrated energy in Germany safe and sustainable. Here, the foundation is laid for the integrative and climate-friendly energy system of tomorrow.

## DKE supports e-mobility and a harmonized electric vehicle charging network

Mobility means more than just using cars, buses and trains. There are already numerous offerings on the market today - from car sharing to small electric vehicles such as e-bikes or e-scooters. Standards are indispensable for the cross-sector coupling of energy, mobility and information technology. In this complex interplay, standards ensure the necessary compatibility, interoperability and, above all, the safety of the diverse mobility systems in order to create a holistic mobility experience for users. A clear focus here is on electromobility.

Standards are indispensable, particularly for multimodality and intermodality and for linking the energy, mobility and information technology (ICT) sectors.

Charging an electric vehicle requires the availability of a suitable infrastructure. Standards offer important rules for this. Only standardized charging plugs and charging systems - both wired and wireless - enable interoperability between different manufacturers, which in turn leads to a market ramp-up of electromobility. Standards also specify efficient billing systems so that the billing process is uniform.

The decade of electromobility has begun. Standards are creating compatible systems, safety and a uniform charging infrastructure. In this way, DKE supports the political agenda and helps electromobility achieve a breakthrough.

## With DKE into a new industrial revolution

We are in the midst of the fourth industrial revolution. A digital industry requires new interfaces within companies and different players. This is where standards for different industrial sectors play a crucial role. With the Standardization Council 4.0 (SCI4.0), DKE has set itself the goal of shaping Industry 4.0 together with partners from industry. Here, the SCI 4.0 has an important, bundling function. Ambitious but also feasible recommendations for action are to be developed for all players, including the national and international initiation and coordination of suitable standards. In addition, this will strengthen the international competitiveness of Germany as an industrial location.

## DKE protects businesses in cyberspace

The decade of digitalization spawns new forms of danger: cyber attacks on businesses, infrastructure and administration occur on a daily basis. Hackers are exposing weak spots in our digital infrastructure to strike and disable industrial plants and even wide areas of power supply.

DKE delivers a foundation for cyber security through international coordination of standards. For future mobility and smart living, state of the art standards addressing large scale communication and information streams are a strict necessity.

Cyber security is achieved by standardization. Through coherent international standards German companies gain access to and influence on global trade. DKE provides the pathway towards European and international standards.

## DKE strengthens SMEs and technical trades in standardization

Small and medium-sized enterprises (SMEs) are the main driving force behind economic growth, innovation and employment. However, it is always a challenge for SMEs to shape the market together with established players. Standardization is an important element in the success strategy of SMEs, especially when it comes to finding a basis for developing innovations, opening up new markets and securing knowledge advantages.

DKE offers training formats and information events specially adapted to the needs of SMEs and the technical trades sector, with the aim of strengthening both in standardization and imparting knowledge on current standardization topics and standardization work. However, for SMEs in particular, international cooperation is not only a time factor, but above all a cost factor. It must be in the interest of German industrial and innovation policy to provide support here without influencing the content. To this end, the state should support cooperation in standardization - especially internationally - in the same way as it has long been practiced for research. This applies in particular to the trades, which form the core of the SME sector in Germany.

The DKE strengthens SMEs in competition - nationally, in Europe and internationally. Novel state support mechanisms must ensure that the competitive edge of German SMEs is maintained in standardization in the future.

## DKE fosters standardization knowledge in the upcoming generation of experts

Only well-trained young people with sound knowledge of standardization can ensure Germany's long-term success in standardization and thus the global competitiveness of our industry. However, electrotechnical standardization plays no role in most curricula at German colleges and universities. The Next Generation DKE initiative is already making an important contribution to knowledge transfer and networking.

The early training of standardization experts would not only relieve the burden on German companies, but also considerably strengthen the perception of the relevance of standardization. Better integration of standardization in the training of technical specialists is therefore essential for a sustainable and forward-looking orientation of technical regulation. This is the only way to ensure that future specialists are informed about the relevance of strategic standardization and the opportunities for exerting influence, and are enabled to participate.

Standardization must be integrated into academic teaching. The goal must be to secure or expand the number of German experts on the committees of DKE, CENELEC and IEC. Here, a holistic approach should be pursued across academia, industry and the political framework.

## DKE as a strong voice in Europe

European standardization makes an important contribution to ensuring the free movement of goods and the functioning of the European Single Market. Its aim is the unification of standards in Europe. The European Commission pays particular attention to standardization because standards affect most areas of public interest, such as the competitiveness of industry, the functioning of the internal market, the protection of the environment and human health. European policy also focuses on the promotion of innovation and technology transfer, as well as on the maintenance of an efficient conformity assessment system, which can only be made possible by a unified European body of standards. Crucial to this success is the trust that all parties involved in the European standardization process place in European standardization organizations (CEN, CENELEC and ETSI). These organizations work according to European values and at the same time

support European competitiveness in global trade through their strong links to international standardization (ISO, IEC).

The digital and electrical decade will also be decided in Europe. Here, efficient cooperation between the European Commission and the European standards organizations must be maintained in a spirit of partnership. The operation of the New Legislative Framework is a model of success and has contributed to the European Single Market and prosperity in Europe through uniform technical requirements. The European model is unique in the world and serves as a model for many other economic areas.

## DKE supports a new global strategy

Standards are an important instrument for spreading innovations in the market. Only with the help of standards a technological basis is created on which companies can compete for the best product in this new technology. This is particularly true in the context of a globalized economy. In addition to pure technology competition, there is also competition between political systems. Here, we are observing a rapid increase in participation and the associated dominance of Asian participation. China, in particular, regards standardization as a geostrategic factor and, with government support, is driving forward standardization activities on a massive scale at national and international level. Standards have paved the way for our current economic strength. But in recent years, other countries have caught up. The central economic policy question for Europe in the 21st century will be, how resolutely we continue our success story and represent our interests vis-à-vis our competitors in the world.

This decade is crucial: A new national and European strategy is needed. A strategy that regards standards not only as a technical tool, but as a sharp sword in global trade policy.

## DKE relieves the legislator

At national level, the importance of standardization policy in the cooperation between standardization and the state becomes clear: Standardization plays a supporting role for deregulation, i.e. the reduction or

elimination of market regulation by the state. The legislator is to be supported by intelligent, largely independent standardization in order to meet the specific requirements of industry. Standardization always strives for a coherent and consistent set of standards, which also contribute to an efficient assessment of the conformity of products. On the basis of laws and ordinances, policymakers leave technical rulemaking to the standardization organizations. This relieves the burden on the legislator, who prepares, recognizes and promotes standardization.

The successful model of the so-called public-private partnership between the Federal Republic of Germany and the standards organizations must continue in the new decade. Particularly in the case of new and innovative technologies, the technical design should continue to be the responsibility of standardization.

**Johannes Koch**

Head of Standardization Policy and Cooperation

DKE German Commission for Electrical, Electronic & Information Technologies of DIN and VDE

Stresemannallee 15  
60596 Frankfurt am Main

Tel. +49 69 6308-268

Fax: +49 69 6308-9326

[johannes.koch@vde.com](mailto:johannes.koch@vde.com)