



Choose certainty.  
Add value.

## Energy efficiency for buildings

Improve the efficiency and  
sustainability of your assets.

### Your challenges

International laws and directives for energy use are becoming more stringent with every passing day. Customers are increasingly conscious of the role they play in global energy consumption. There is also a growing demand for green buildings among investors and building tenants.

Energy efficiency is the major pillar of any green building certification scheme. Building owners and operators need to consider evaluating the benefits of their investments into energy-efficient systems against potential utility savings. Government incentives for retrofitting to green building standards may also factor into the decision-making process. Conducting such analyses requires a high degree of technical know-how and business acumen, as well as expert knowledge on current and upcoming regulations affecting energy distribution and consumption.

### Why is energy efficiency important for your business?

It makes good business sense for building designers, developers, operators and facility management companies to comply with ever-changing national and international standards for green buildings and energy efficiency. Buildings account for nearly 40 per cent of total energy usage worldwide and up to 38 per cent of global CO<sub>2</sub> emissions. Green buildings use 30 per cent less energy than conventional buildings and research indicates that every US\$1 invested into energy efficiency avoids more than US\$2 in energy supply costs<sup>1</sup>. In order to remain competitive, it is crucial to identify technologies, tools and systems that your buildings can leverage to drive down energy costs and realise these savings.

1 "Driving Transformation to Energy Efficient Buildings" (PDF), World Green Building Council: <http://www.worldgbc.org/site2/resources/case-studies/gbc-reports>



## How can we help you?

The key to introducing energy efficiency into your real estate is to conduct a holistic analysis of the building design, materials used, the technical building services, the equipment and components selected, and the production operations throughout the entire building lifecycle. TÜV SÜD provides expert intelligence and on-site energy efficiency advice for commercial, industrial and residential real estate on both existing building structures and systems as well as in the pre-construction phase. Our experts also help you optimise your facilities and processes, and work with you to develop a practical system aimed at generating energy savings by improving the energy efficiency of your assets.

## Our energy efficiency services

TÜV SÜD's holistic approach to energy efficiency addresses the entire building structure, infrastructure and production operations.

- **Energy and media efficiency (TÜV SÜD EME standard for real estate and production infrastructure)**

TÜV SÜD offers an integrated approach to energy efficiency that analyses the entire building envelope, systems and components. We provide a suite of customised solutions for holistic optimisation for energy efficiency. Our services help to reduce energy consumption, operating costs and CO<sub>2</sub> emissions, while at the same time ensuring production quality, and compliance with legal requirements, standards

and directives. We support you in realising corporate objectives and strategic direction, assessment of systems, equipment and components, determining suitable measures, and implementation. This integrated approach includes energy audits, on-site workshops, calculation and evaluation of energy flows, as well as determining short- and long-term energy savings potential.

- **Energy audits**

Our experts study your building's use of energy to identify opportunities for energy conservation and establish an energy management programme. This begins with a thorough energy audit to determine ways to reduce the building's specific energy consumption (SEC) and ends with an assessment that quantifies the savings potential for each of the proposed measures along with the costs and return on investment.

- **Energy consultancy for buildings**

We provide reliable evaluation of a building's potential for energy optimisation and help clients understand their energy consumption and areas of wastage. Where appropriate, we can also identify opportunities to resell excess energy back to the national grid or neighbouring developments. In addition, TÜV SÜD offers full mechanical, electrical and plumbing (MEP) design capabilities to deliver a complete service from initial audit through to the installation and commissioning of the revised building systems.



- **Energy management system consultancy**

TÜV SÜD helps you set up an ISO 50001-compliant Energy Management System (EnMS) that will enable you to integrate energy management best practices into your current management system.

- **Energy modelling and simulation**

Our experts use 3D computer modelling and dynamic simulation modelling (DSM) to conduct energy efficiency and simulation studies that provide an accurate and reliable representation of a building's energy consumption. This helps building owners and operators understand the relationship between various systems and may be used to support decisions to adopt green measures.

- **Lighting simulation**

Using advanced lighting simulation tools and techniques to create photorealistic scenarios of different lighting, our experts can make recommendations on how to maximise the use of natural lighting to reduce lighting energy costs by up to 60 per cent.

- **Certification**



TÜV SÜD offers certification services that may be adapted to suit local regulations and requirements. We provide energy efficiency certification for 'Energy-Efficient Enterprise',

lift systems, plants and systems, as well as heating, refrigeration and air-conditioning products. If all criteria have been fulfilled, your building will receive the TÜV SÜD certification mark.

- **Training**

Our customised training programmes include EnMS awareness training, energy auditor training, technical energy manager training and M&V protocol training.

### Your business benefits

- **Save money** – by improving the cost effectiveness of your building and its systems. Our experts pinpoint potential areas for energy savings and make recommendations to maximise the efficiency of your assets.
- **Safeguard your investments** – with sustainable energy schemes and certifications that can significantly enhance the value of your assets.
- **Gain legal compliance** – by improving the transparency of your production processes to comply with increasingly stringent national and international statutory requirements, and climate change regulations.
- **Strengthen your competitive edge** – with a TÜV SÜD-certified commitment to sustainable development that serves as a powerful marketing tool to help your company stand out.
- **Profit from our holistic approach** – with a customised service package and objective expert reports on energy-related issues.
- **Offer tenants a better quality of life** – with a sustainable energy policy that enhances your building's value and motivates building occupants to implement their own energy conservation efforts.



- **Save time with an expert partnership** – that delivers these services effectively and on schedule, allowing you to focus on your core business goals. Energy efficiency is a core competency of TÜV SÜD.

### Why choose TÜV SÜD?

TÜV SÜD has a strong reputation for independence, which ensures impartial assessments of all relevant structural, technical and organisational aspects of your building. Our holistic approach to energy efficiency means that we add value to your business during every stage of the building lifecycle, from design and construction through to operation and maintenance.

Our interdisciplinary team consists of electrical, construction and plant engineering experts with decades of combined experience working on significant global projects. Our experts also have in-depth familiarity with all relevant international regulatory requirements regarding energy. They are regularly called upon to advise local authorities, energy suppliers and project designers across the globe on investment decisions to improve energy efficiency and reduce emissions.

### Choose certainty. Add value.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East and Asia. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

### Related services

TÜV SÜD provides the following related services:

- Sustainability rating services
- Carbon footprint certification
- Civil and structural engineering services
- Mechanical, electrical, and plumbing (MEP) services
- Due diligence services
- ISO 14001 – Environmental management system certification
- ISO 50001 – Energy management system certification