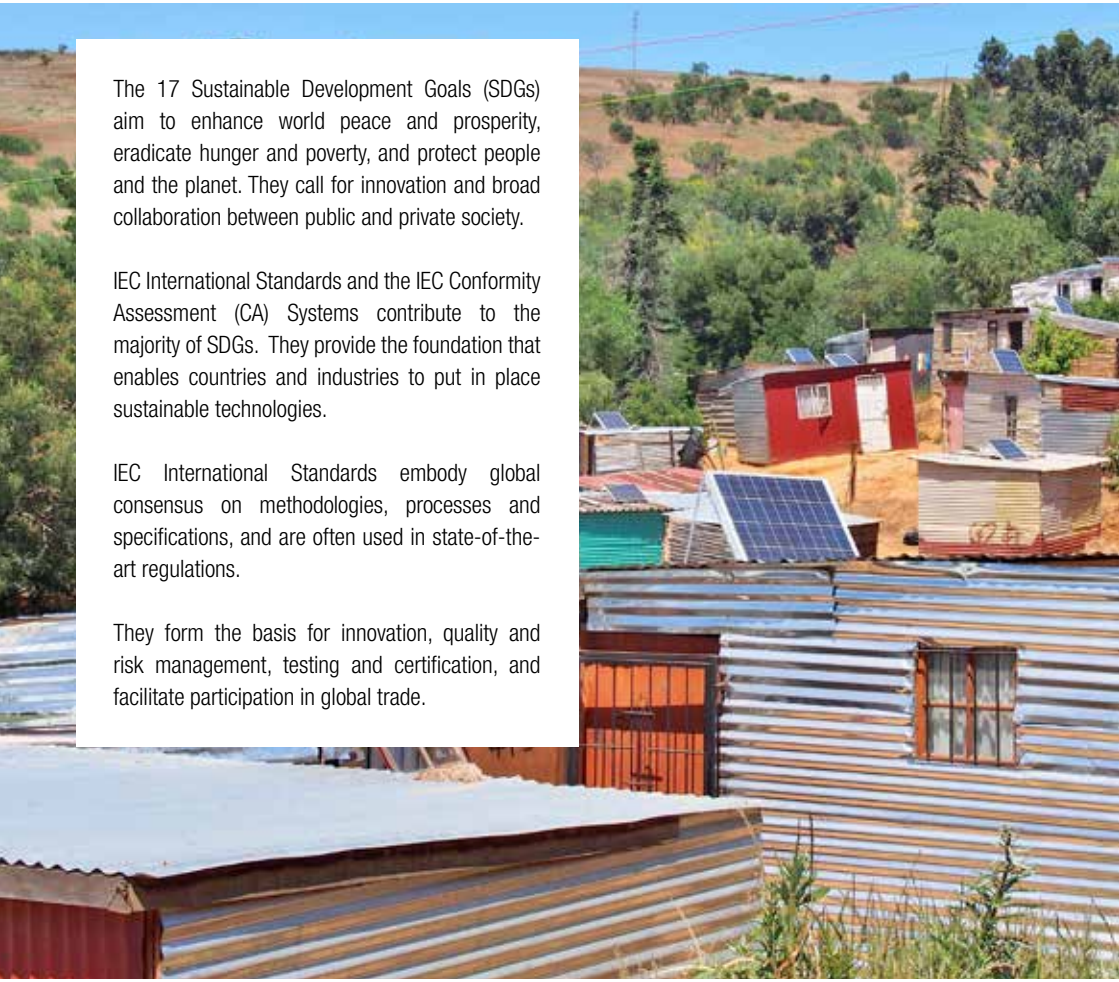
IEC and Sustainable Development Goals (SDGs)

Encourage sustainable development everywhere



The 17 Sustainable Development Goals (SDGs) aim to enhance world peace and prosperity, eradicate hunger and poverty, and protect people and the planet. They call for innovation and broad collaboration between public and private society.

IEC International Standards and the IEC Conformity Assessment (CA) Systems contribute to the majority of SDGs. They provide the foundation that enables countries and industries to put in place sustainable technologies.

IEC International Standards embody global consensus on methodologies, processes and specifications, and are often used in state-of-the-art regulations.

They form the basis for innovation, quality and risk management, testing and certification, and facilitate participation in global trade.

Who benefits from IEC work?

Business

—

IEC work enables small and big companies to design and build consistently safe, efficient, and affordable products and systems that are accepted everywhere in the world.

Governments

—

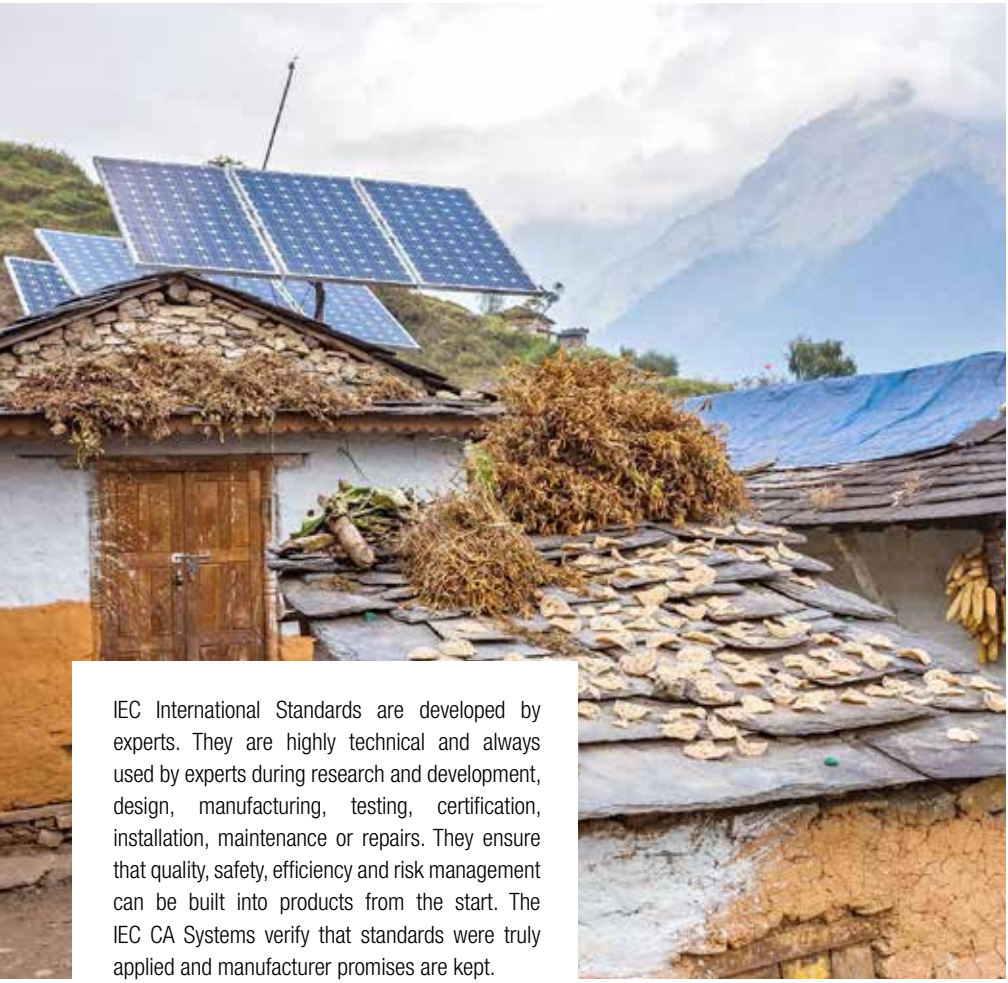
Regulators and policy makers rely on IEC International Standards to set safety, security and reliability requirements for appliances, manufacturing, as well as energy, water, transportation and healthcare infrastructure. Together with the IEC CA Systems, regulators can set and enforce legislation that protects populations and the environment from unsafe products and health hazards.

Consumers

—

Consumers get access to quality products and infrastructure; more efficient, affordable and reliable energy services; modern healthcare, and safer food and water.

How IEC contributes to SDGs



IEC International Standards are developed by experts. They are highly technical and always used by experts during research and development, design, manufacturing, testing, certification, installation, maintenance or repairs. They ensure that quality, safety, efficiency and risk management can be built into products from the start. The IEC CA Systems verify that standards were truly applied and manufacturer promises are kept.

Energy – the golden thread

Electricity is the golden thread that impacts all SDGs. It is the cornerstone for economic development, facilitates poverty and hunger reduction efforts, improves healthcare, education and empowers women.

Access to affordable, reliable energy services

—

IEC work underpins off-grid and on-grid energy infrastructure and enables the measurement of energy efficiency.

3 IEC systems committees (SyCs), all 4 IEC CA Systems and more than 1 000 IEC Standards developed by 133 IEC technical committees and subcommittees (TC/SCs) are relevant to SDG 7.

- Energy access
- Power generation
- Power transmission
- Power distribution
- Solar energy
- Wind energy
- Marine energy
- Hydrogen
- Nuclear power
- Lighting
- Generation from fossil fuels (coal, gas, oil)
- Rural and off-grid electrification
- LVDC
- Microgrids
- Energy efficiency technologies
- Transportation (train, metro, bus, skytrains, etc.)
- Electric vehicles and charging infrastructure
- Energy storage and batteries
- Electric motors and generators

Enable access to basic services

Access to a reliable supply of electricity, clean water, education, more efficient farming, lighting, safe food, etc. is often the first step to overcome poverty.

Today more than 1/3 of food produced is not eaten and food waste is the largest emitter of greenhouse gases. Cooling food and meat helps reduce food waste and cut greenhouse gas emissions by up to 50%. The IEC provides the technical foundation for domestic and industrial cooling systems.

15 IEC TC/SCs and 3 IEC CA Systems contribute to SDG 1 and SDG 2.

- Electricity access
- Electricity generation
- Lighting
- Refrigeration
- Clean water
- Education
- Safety

Safe medical devices

Access to quality healthcare is an essential human right. IEC work provides the technical foundation that ensures the safety of medical devices used in disease prevention, diagnostics and treatments.

17 IEC TC/SCs, 2 IEC SyCs and 2 IEC CA Systems contribute to SDG 3.

- Medical devices
- Cooling
- Diagnostic imaging
- Emergency medical services
- Alarm systems
- Lighting
- Infra- and ultrasound
- Radiotherapy
- Laser safety
- Laboratory equipment
- Overall electrical safety
- Functional safety
- Cyber security

Access to information

Obtaining a quality education is the foundation to creating sustainable development. Today, education increasingly depends on electronic devices such as mobile phones, computers, displays, video, audio, etc., to access information. IEC work underpins the electrical and electronic hardware used in education.

24 IEC TC/SCs and 2 IEC CA Systems contribute to SDG 4.

- Electricity access
- Computer hardware and displays
- Mobile phones
- Audio
- Radio
- Television
- E-readers
- Lamps
- Data storage systems

Easier life, more opportunities

Access to clean water nearby, lighting after dark, online education, etc. allow women to focus on value-add tasks, reducing the time they spend on daily chores. IEC work underpins the technologies that make women's lives easier, and help increase their status by permitting them to contribute in new ways to local economies and society.

19 IEC TC/SCs, 1 IEC SyC and 2 IEC CA Systems contribute to SDG 5.

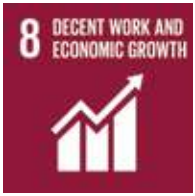
- Clean water
- Electricity access
- Electricity generation
- Lighting
- Education
- Safety
- Computer hardware and displays
- Software
- Data storage systems
- Mobile phones
- Audio
- Radio
- Television
- E-readers

Safe and affordable water

Demand for drinking water is forecast to rise by 55% until 2050. Supplying water requires a large number of electrical and electronic systems, which rely on IEC work. Water is pumped from wells, rivers, lakes or oceans, transported through pipes to purification, filtration or desalination, and then distributed to households, factories or fields. Increasingly sensors control the length of flow on taps, toilets or irrigation systems. Even the simplest water treatment plants use electric pumps, valves and scrapers.

26 IEC TC/SCs and 2 IEC CA Systems contribute to SDG 6.

- Water extraction (pump)
- Ocean thermal energy conversion (OTEC)
- Electric motor
- Valve
- Water treatment
- Control and instrumentation
- Ultraviolet light
- Sensor
- Irrigation
- Industrial water use



Safety of workers, economic growth

IEC International Standards together with testing and certification increase the safety of electric tools and of the workers who use them. They also help increase economic productivity and simplify technological upgrading. International standards contain global consensus and expertise; they are recognized by the World Trade Organization as an essential tool to reducing barriers to global trade.

58 IEC TC/SCs, 1 IEC SyC and 3 IEC CA Systems contribute to SDG 8.

- Energy access
- Lighting
- Safety
- Technological upgrading
- Safety of machinery and tools
- Alarm and security systems
- Energy efficiency
- Fibre optics and cables
- Ultrasonics
- Electroheating
- Multimedia systems
- Computing hardware and software
- Television
- Radio
- EMI protection
- Quality management
- Risk management
- Global trade

Quality infrastructure

IEC work in standardization and conformity assessment supports the development of robust infrastructure, and encourages innovation and technology transfer. It gives regulators, buyers and consumers the confidence that devices and systems are built to globally agreed levels of safety and reliability. It comforts investors and insurers that global best practice has been applied, including in terms of sustainability.

80 IEC TC/SCs, 4 IEC SyCs and all 4 IEC CA Systems contribute to SDG 9.

Developing countries are able to participate in the IEC Affiliate Country Programme and benefit from IEC work without the financial burden of membership.

- Knowledge transfer
- Innovation
- Information technology
- Global trade
- Quality management
- Risk management
- Safety
- Energy access
- Lighting
- Batteries and energy storage
- Energy efficiency
- Hazardous materials and waste control
- Environment

Equal access to know-how

A national quality infrastructure (NQI) allows developed countries to verify the quality, safety and sustainability of products and services. Many developing countries lack an NQI. IEC International Standards give developing countries access to global state-of-the-art know-how in different technology areas. Their adoption and use allows countries to lift barriers to trade, level the playing field and reduce inequalities of outcome.

Many IEC TC/SCs, several thousand IEC Standards and all 4 IEC CA Systems contribute to SDG 10.

Developing countries are able to participate in the IEC Affiliate Country Programme and benefit from IEC work without the financial burden of membership.

- Knowledge transfer
- Innovation
- Global trade
- Quality management
- Risk management
- Energy access
- Safety
- Environmental protection
- Information technology
- Reduce inequalities

Sustainable urbanization

Safe food, clean water, electricity access, economic, social and environmental sustainability, safety and security: cities must fulfil these promises to provide a decent quality of life to citizens.

IEC work in standardization and conformity assessment underpins the large majority of electrical and electronic infrastructure in cities: transportation, water and sanitation, electricity generation, healthcare, financial and administrative services, security and alarm systems, access control, CCTV, lighting, and more. They make infrastructure more resilient, help mitigate disaster risks and accelerate recovery.

73 IEC TC/SCs and nearly 2 000 IEC Standards, 4 IEC SyCs and all 4 IEC CA Systems contribute to SDG 11.

- Power generation
- Energy efficiency
- Water
- Electricity access
- Healthcare
- Lighting
- Transportation
- Water and sanitation
- Food production and distribution
- Administration and financial services
- Information technology
- Manufacturing
- Environmental protection
- Obsolescence management
- Waste management
- Risk management
- Resilience
- Safety

Responsible consumption and production

IEC work helps make efficient use of natural resources, for example by underpinning farming, food processing, or cooling technologies.

IEC International Standards together with the IEC CA Systems allow countries to increase production efficiency, strengthen technological capacity and manage supply chains. They also help manage the use of hazardous substances in the manufacturing of electrical and electronic devices.

92 IEC TC/SCs and 2 IEC CA Systems contribute to SDG 12.

- Knowledge transfer
- Innovation
- Global trade
- Quality management
- Risk management
- Energy access
- Lighting
- Energy efficiency
- Manufacturing and automation
- Farming and animal rearing
- Safety
- Environmental protection
- Hazardous materials and waste control
- Cooling

Strengthen resilience, reduce disaster impact

IEC International Standards provide the methodologies to measure efficiency, performance and safety of devices and systems. Together with testing and certification they help countries strengthen the disaster resilience of infrastructure, reduce disaster risks and accelerate disaster recovery.

They help ensure that alarm systems operate even under extreme conditions, and protect workers during repairs, for example on downed power lines.

42 IEC TC/SCs, 3 IEC SyCs and all 4 IEC CA Systems contribute to SDG 13.

- Sustainability
- Resilience
- Disaster prevention
- Alarm systems
- Disaster recovery
- Risk management
- Environmental conditions classification
- Smart cities
- Smart energy
- Smart transportation
- Smart manufacturing

Reduce marine pollution

Electrification of shipping, harbour loading and unloading; safety on off-shore platforms; wastewater treatment; marine energy generation; IEC work in standardization and conformity assessment helps prevent and reduce marine pollution both from land-based and ocean-based activities.

5 IEC TC/SCs and 1 IEC CA System contribute to SDG 14.

- Reduction of marine pollution
- Wastewater treatment
- Wastewater management
- Electrification of shipping
- Loading and unloading
- Safety and control on off-shore platforms
- Hazardous substances

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Basic services and security

Peaceful and inclusive societies rely on good governance, including for the safety, efficiency and reliability of infrastructure and basic services.

8 IEC TC/SCs and 3 IEC CA Systems contribute to SDG 16.

- Electricity access
- Lighting
- Clean water and sanitation
- Water extraction
- Healthcare
- Education
- Resilience of infrastructure
- Efficient transport
- Ability to manufacture and trade
- Safety and security
- Cyber security

Better access to technology and innovation

IEC International Standards are the result of the broad collaboration and consensus of a wide range of stakeholders from every part of the world. The neutral and independent IEC global platform fosters multi-stakeholder partnerships at the international, regional and national levels. It encourages the sharing of knowledge and expertise, simplifies technology transfer, and helps make the world a safer, more sustainable place for all.

Developing countries are able to participate in the IEC Affiliate Country Programme and benefit from IEC work without the financial burden of membership. They are able to build expertise in quality and risk management, learn about testing and certification, and adopt and use IEC International Standards free of charge.

All IEC TC/SCs, IEC SyCs, IEC CA Systems contribute to SDG 17.

- Technology access
- Knowledge transfer
- Innovation
- Mentoring
- Collaboration
- North South partnerships
- Quality management
- Risk management
- Sustainability
- Global trade

About the IEC

The IEC (International Electrotechnical Commission) is a global, not-for-profit membership organization that brings together 173 countries and coordinates the work of 20 000 experts globally. IEC International Standards and conformity assessment work underpins international trade in electrical and electronic goods. It facilitates electricity access, and verifies the safety, performance and interoperability of electric and electronic devices and systems, including for example consumer devices such as mobile phones or refrigerators, office and medical equipment, information technology, electricity generation, and much more.

A global network of 173 countries that covers 99% of world population and electricity generation

Offers an affiliate country programme to encourage developing countries to get involved in the IEC free of charge

Develops international standards and runs four conformity assessment systems to verify that electrical and electronic products work safely and as they are intended to

IEC International Standards represent a global consensus of state-of-the-art know-how and expertise

A not-for-profit organization enabling global trade and universal electricity access

Key figures

173
members and affiliates

>200
technical committees

20 000
experts from industry, test and research labs, government, academia and consumer groups

>10 000
international standards published

4
global conformity assessment systems

>1 million
conformity assessment certificates issued

>100
years of expertise

Further information

Please visit the IEC website at www.iec.ch for further information. In the "About the IEC" section, you can contact your local IEC National Committee directly. Alternatively, please contact the IEC Central Office in Geneva, Switzerland or the nearest IEC Regional Centre.

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IEC SDGs A5:2019-09(en)