IEC for SDGs

Working towards a sustainable future

In 2019, the IEC Standardization Management Board (SMB) formed a group (ahG 84) to evaluate the present and future contributions of IEC to SDGs. In February 2020, the final report of this group was submitted to the SMB and approved with an overwhelming majority. This briefing paper is based on the findings and recommendations of ahG 84.

Executive summary

The United Nations defines 17 Sustainable Development Goals (SDGs) at the core of its blueprint for building a better world by 2030. The SDGs serve as a universal plan for all countries to end poverty and stimulate economic growth, preserve the environment and ensure prosperity for all.

The SDGs set the global development agenda until 2030 with clear objectives and measurable targets to determine progress for each goal. Given the link between economic development, social inclusion and environmental sustainability, these goals must be addressed as a group and will require global cooperation. They can be viewed as a toolkit which helps nations allocate resources, define priorities and enable change.

Today electricity, electronics, and information technology touch almost every aspect of life on earth. Electricity is the cornerstone for economic development and social well-being, serving as the golden thread across all SDGs. Through its international standards and conformity assessment (CA) systems, the IEC contributes to all 17 SDGs.

Building upon the knowledge and expertise of its membership, the IEC provides a framework necessary for the development of global technologies. It ensures the safety, performance and sustainability of electrical, electronic and information technologies that underpin all SDGs. With its consensus-based approach, the IEC reflects the needs of countries across the world.

In 2016, the IEC began identifying how its work contributes to the SDGs. In February 2019, the IEC Standardization Management Board (SMB) set up *ad hoc* group ahG 84 with the objective of educating and motivating the IEC community about the SDGs in collaboration with the IEC Market Strategy Board (MSB), the IEC Conformity Assessment Board (CAB) and leaders from the IEC Young Professionals Programme. This has resulted in a comprehensive briefing document detailing how the IEC helps to achieve the 17 SDGs and provides IEC stakeholders with recommendations on the next steps in reaching these goals.

Following the approval of this briefing document, the IEC will undertake a campaign to help the IEC community as well as external stakeholders better understand the importance of standards and CA in achieving the 17 SDGs. To help link the work of standardization and the SDGs, the IEC will revise its processes so that IEC committees better understand from the onset of the standardization process how their work contributes to the SDGs.

SDGs are perhaps the most impactful undertaking for global good in the 21st century and an opportunity to leave a better world for future generations.

Understanding the UN SDGs

Key aspects of the SDGs

In 2015, more than 193 world leaders committed to 17 Sustainable Development Goals (SDGs) to end extreme poverty, fight inequality, protect the planet and ensure prosperity for all by the year 2030.

Contrary to previous approaches to development, however, the SDGs call for an all-encompassing approach that recognizes the interlinkages between the goals. They depend upon a balance between the three dimensions of sustainable development as the organizing principle for global cooperation, combining economic development, social inclusion, and environmental sustainability. Improvement in one area of development cannot be disassociated from gains in the other areas. As a result, the SDGs are integrated and indivisible from one other.

The SDGs framework stimulates action on five key themes: people, planet, prosperity, peace and partnerships, as described below:

- **People:** *"We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment."*
- **Planet:** *"We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of present and future generations."*
- **Prosperity:** "*We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature."*
- **Peace:** *"We are determined to foster peaceful, just and inclusive societies, which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development."*
- **Partnerships:** *"We are determined to mobilize the means required to implement this Agenda through a revitalized Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people."*

The SDGs serve as a toolkit to help nations allocate resources, define priorities and accelerate change. Achieving these goals will require a herculean effort from all segments of society, encompassing both public and private entities, that must work together to bring these goals to fruition.

Global indicator framework for the SDGs

While the 17 SDGs are a global commitment by the political leadership of 193 countries to their citizens, they are built upon the earlier UN Millennium Development Goals (MDGs). A key lesson learnt from the MDGs is that a lack of reliable data can undermine the ability of governments to set goals, optimize investment decisions, manage development processes and measure progress. The SDGs seek to redress this issue.

As a result, to bring greater focus to these efforts and provide global harmonization, the SDGs are further segmented into 169 targets, which each country is expected to achieve at its own pace based on its resources and priorities. Further, to ensure there is a common harmonized way of assessing achievement of the targets, measurable indicators have been defined for each target and goal. In total 232 measurable indicators are defined.

A robust follow-up and review mechanism for the implementation of the 2030 Agenda for Sustainable Development requires a solid framework of indicators and statistical data to monitor progress, inform policymakers and ensure the accountability of stakeholders.

A quick review of the targets and indicators shows that many of them are (directly or indirectly) impacted by electrical, electronic and information technologies. IEC International Standards together with IEC CA Systems, have contributed to all 17 SDGs for decades, long before the goals were defined. Currently there are close to 300 keywords identified that can be linked to around 5 500 IEC Standards and other publications.

Looking ahead, the impact of IEC work on SDGs will be continuously tracked by IEC technical committees who will report on activities that contribute to them.

Technology drives development for the greater good

Rapid technological change is deepening the integration of the world economy and enabling breakthroughs in productivity, with a significant potential to speed the pace of global development and economic convergence. Of importance to the SDGs is the current "data revolution", characterized by an explosion of available data resources and rapidly evolving technologies for analyzing data.

New technologies offer significant opportunities to deliver public services, including healthcare, education, and basic infrastructure to more people and at a lower cost. E-government can offer new approaches to manage the complex and dynamic relationships between institutions and stakeholders.

The scale of the digital and technological divide will help determine whether certain societies and sectors will succeed. The SDGs recognize the pivotal role of data and technology in advancing a range of issues critical to the SDGs. Despite this recognition, processes are still required to ensure that technologies reach those that need them, in a scalable, cost-effective and sustainable manner.

Much of the technology needed to achieve the SDGs already exists. Now, it is primarily a question of coordinating people, governments, businesses and funding. A global, or at least a regional approach, could be useful to move the SDGs forward.

Many novel technologies that are currently in varying stages of deployment have achieved popular attention and could be considered as leapfrog technologies to help advance the SDGs. Mobile phones and off-grid, renewable energy technologies are two examples of how modern technologies have successfully enabled development. Artificial intelligence and big data, Internet of Things, robotics, drones, and remote sensing as well as nanotechnology and nanomaterials may provide further opportunities. However, global cooperation is necessary to implement them effectively.

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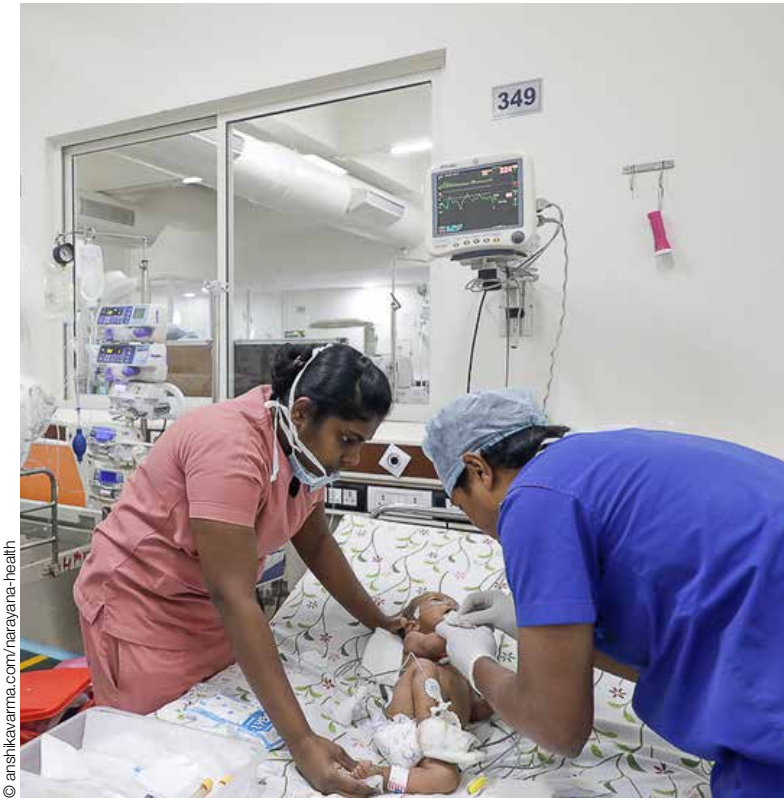

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The business case for working on SDGs

Companies face challenges that limit their potential to grow, such as scarce natural resources, weak financial markets, limited local buying power and lack of qualified talent. At the same time, they increasingly operate in a complex environment with heightened awareness and scrutiny over activities, business practices and their environmental and societal impact. As a result, regulatory action on the national, regional, and international levels is on the rise. There is a clear emergence of a business case for companies to harness the SDGs to create opportunities to address these challenges across key themes of growth, risk, capital and purpose.

At the global level, continued business growth is tied to the achievement of the SDGs. By acting at a local level, companies should identify how they can contribute to meeting the goals in a way that also drives financial performance. While certain SDGs refer directly to economic growth, employment, sustainable industrialization, innovation, and sustainable production, many of the other SDGs also offer business opportunities by opening new markets, attracting talent and reducing operational risks.

Each SDG addresses a risk area that poses challenges to businesses and society. These risks are likely to continue to grow if not properly addressed. Supply chains are particularly exposed to the effects of climate change and the depletion of natural resources, which are addressed by SDG 12, 13, 14 and 15. Geopolitical stability (SDG 16), equality (SDG 5 and 10) and improved prospects for development (SDG 1, 2, 3 and 4) increase opportunities for emerging markets.

Addressing these and other risks makes good business sense considering that stakeholders often hold companies accountable for their role in creating or exacerbating such risks. Furthermore, industries give preference to an internationally coordinated response to these challenges based on international standards and CA systems.

The UN estimates that the cost of achieving the SDGs will be approximately USD 3,3 to 4,5 trillion every year until 2030. SDGs not only make perfect sense for society, they may also offer the greatest business opportunity of the 21st century.

IEC and the SDGs

Today, electricity, electronics, and information technology touch nearly every aspect of life on earth. Electricity is the golden thread across all 17 SDGs and the UN recognizes it as the cornerstone for economic development, facilitating poverty and hunger reduction efforts, improving healthcare, education and empowering women.

While not immediately obvious, IEC International Standards and other publications, together with IEC CA Systems have contributed to the targets of all 17 SDGs for many years. The IEC provides the technical foundation for the entire energy chain and all equipment that is driven by electricity. Its standardization work is central to achieving global consensus on electrical and electronic technologies with regard to efficiency, resilience and safety for workers, populations and the environment.

IEC Standards embody global consensus on methodologies, processes and specifications to provide the foundation that enables countries and industries to adopt, build and install sustainable technologies. They enhance access to technology, innovation, quality and risk management. They promote the development, transfer and dissemination of environmentally-sound technologies and facilitate participation in global trade.

IEC work reflects the needs of all participating countries across the world and is central to the accessibility and roll-out of globally relevant technologies. IEC work enables energy efficiency gains, increased resilience and long-term viability of infrastructure at lower cost. This makes it easier for countries to upgrade and expand their energy and industrial infrastructure.

While electricity is relevant to all SDGs, some of them are very directly influenced by IEC work:

- SDG 3: Good health and well-being
- SDG 6: Clean water and sanitation
- SDG 7: Affordable and clean energy
- SDG 9: Industry, innovation, and infrastructure
- SDG 11: Sustainable cities and communities
- SDG 12: Responsible consumption and production
- SDG 13: Climate action
- SDG 17: Partnerships for the goals

IEC contribution towards the SDGs

IEC International Standards are used in research and development, design, manufacturing, installation, dismantling, recycling, etc. They embody the consensus, expertise and know-how of global experts to ensure that devices, systems and processes are efficient, reliable and safe, time after time. IEC International Standards also guide professionals during installation, operation, maintenance, or repairs, and can help confirm their professional competence. Additionally, IEC Standards form the basis for testing and certification as part of a national quality infrastructure.

It is therefore important that countries influence and adopt international standards and use them to verify through testing and certification that manufacturers' promises are kept.

Most IEC International Standards impact several SDGs because processes and technologies are generally not confined to individual SDGs. By explaining how IEC work contributes towards achieving SDGs, regulators and policymakers in developing and developed countries will better understand how adopting and using international standards in national regulations is an excellent tool for the effective and cost-efficient implementation of the SDGs.

To better illustrate the different areas of IEC activity, icons have been developed as representative tools. They illustrate the horizontal topics where many IEC Standards are taken together to make significant contributions towards the individual SDGs.

Enable access to basic services


Electricity access


Lighting


Clean water


Refrigeration


Education

Access to education


Electricity access


Lighting


Education


Electronic devices, displays, ICT, data storage, software

Safe medical devices


Medical devices


Medical lighting


Imaging


Emergency medical devices


Ultrasound


Electrical safety


Functional safety


Cyber security

Less hardship, more opportunities


Electricity access


Lighting


Clean water


Education and information

Safe and affordable water


Water extraction, desalination, purification


Wastewater treament


Sensors


Water distribution and use

Energy – the golden thread


Power generation


Electricity access


Power distribution


Lighting


Transportation


Energy efficiency

Safety of workers and economic growth

- Electricity access
- Lighting
- Safety of electric tools
- Alarm systems
- Technology upgrading
- Reduce barriers to trade
- Quality & risk management

Resilient infrastructure and sustainable industrialization

- Innovation
- Knowledge and technology transfer
- Hazardous materials and waste control
- Sustainability, efficiency
- Quality & risk management

Equal access to global expertise

State-of-the-art know-how in safety, quality & risk management

- Lift barriers to trade
- Reduce inequalities

Sustainable urbanization

- Clean water
- Electricity access
- Lighting
- Healthcare
- Safe food
- Transportation
- ICT
- Electrical safety
- Water & waste management
- Resilience
- Efficiency
- Sustainability

Responsible consumption and production

Electricity, lighting, cooling

- Knowledge transfer
- Supply chain management
- Quality & Risk management
- Production efficiency
- Hazardous substances management

Strengthen resilience, reduce disaster impact

- Smart electrification and microgrids
- Resilience
- Alarm systems
- Disaster mitigation
- Sustainability
- Greenhouse gas reduction

Reduce marine pollution

Electrification of shipping, loading and unloading

Safety and control for off-shore platforms

Pollution prevention

Wastewater treatment & management

Sustainable use of terrestrial ecosystems

Greenhouse gas reduction

Energy efficiency

Waste management

Life cycle impact

Water management

Environmental conservation

Pollution prevention

Promote peaceful and inclusive societies

Electricity, lighting, clean water

Healthcare

Education

Transportation

Resilience

Cyber security

Better access to technology and innovation

Multi stakeholder partnerships

Knowledge transfer

Mentoring

Quality & risk management

Sustainability

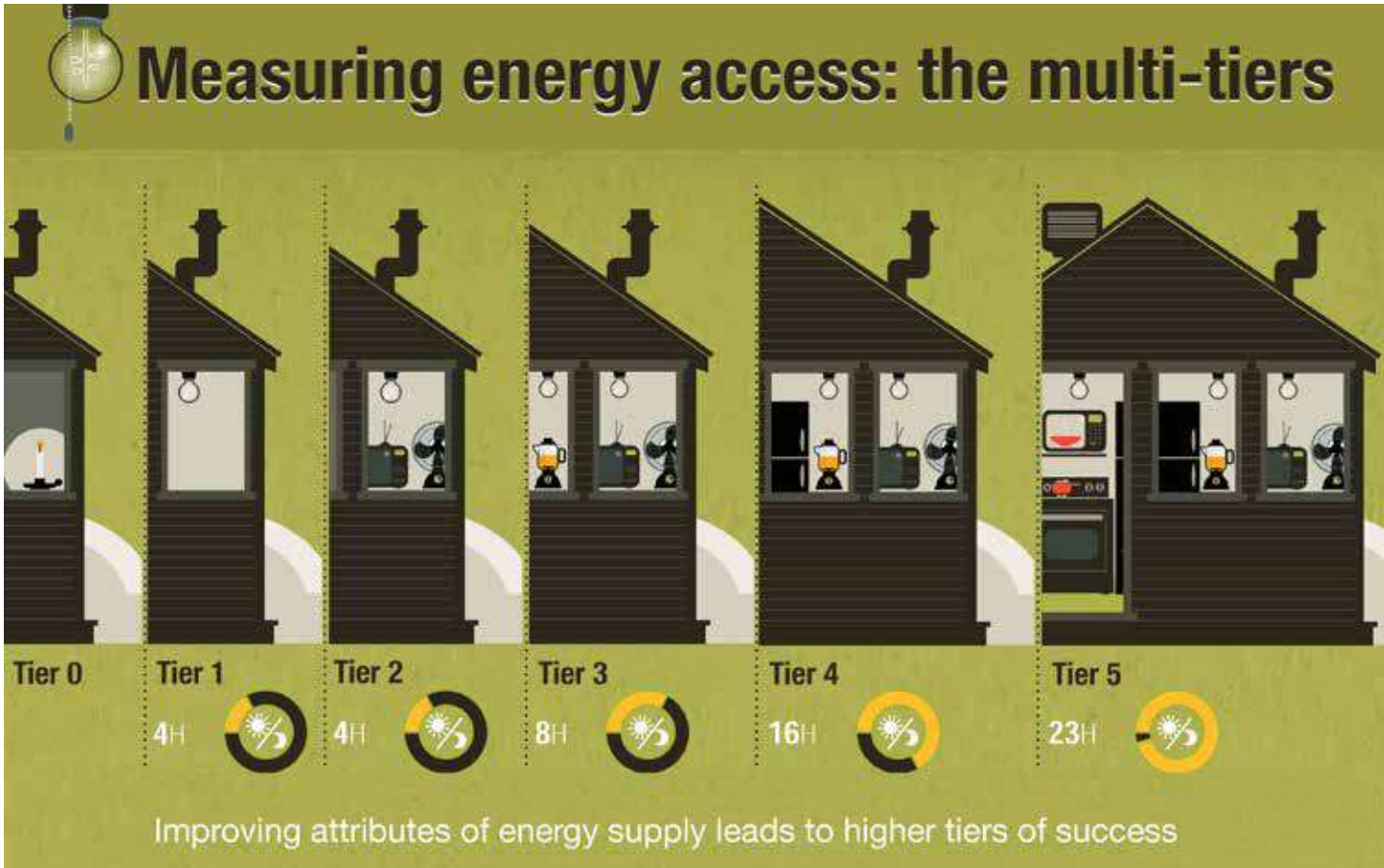
Case study: enabling electricity access

Is there anything we can do without electricity? Be it lighting, education or healthcare, productive work of almost any kind requires electricity. Not providing electricity is the same as denying the fundamental right to be part of today's opportunities in an increasingly connected world. And yet, close to 1 billion people worldwide still do not have access to electricity.

However, connecting each dwelling to a stable conventional electric grid is near impossible due to distance, cost and regulations. Direct current (DC) based on off-grid networks offers a possible solution. Given the urgency to enable electricity access, nations are seeking innovations which help reduce the time required to electrify rural areas in an affordable and sustainable manner. Herein lies the relevance of the latest IEC work on enabling electricity access through appropriate standards for solar home systems and small DC microgrids based on existing technologies. They include solar photovoltaic (PV) panels or other nano power generation forms, power converters and safe extra-low voltage (SELV). Through specified parameters which bring the various components together, safety and affordability of the entire system is ensured.

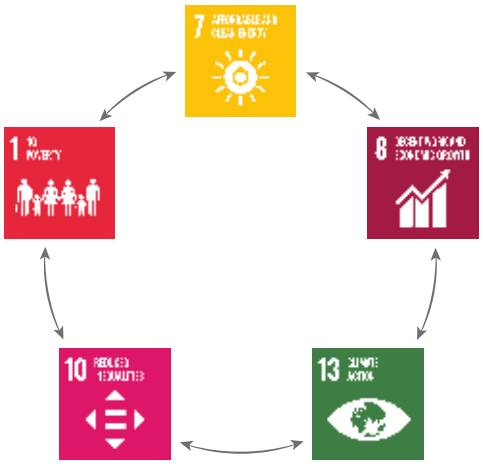
The IEC Systems Committee (SyC) LVDC develops systems level standardization, coordination and guidance in the areas of low voltage direct current (LVDC) both for general use and for electricity access, which directly impacts SDG 7. Using a systems approach, it is possible to examine the properties of the system as a whole and how the parts interact with each other, rather than the action of each part separately. SyC LVDC seeks input from various IEC technical committees including those related to solar PV energy systems (TC 82), the safety of electrical installations (TC 64) and electrical accessories (TC 23).

In countries facing the challenge of electricity access, the World Bank is actively engaged with policymakers to urgently fund relevant projects. For guidance to electrification planners and implementers, the World Bank has created the Energy Sector Management Assistance Program (ESMAP) Multi-Tier Framework (MTF) which includes definitions for electricity access and which have been adopted by the IEC SyC LVDC. IEC Standards for DC appliances already exist for tier 1 such as for standalone solar lanterns – IEC 62124 from TC 82. To ensure protection against electric shock, the voltage of electrical installation is limited to SELV. Furthermore, to ensure protection against thermal effects and fire hazards, the total value of load, or appliances (calculated in watts) is also limited so that the battery capacity and the electric supply through the distribution cables are limited and the distance between the appliance and the battery is clearly specified.



IEC SyC LVDC is now in the process of crafting standards for electrification for Tier 2 and 3 electricity access.

Rural communities will be able to install DC solar home systems and DC microgrids to enable rapid, affordable, and safe electricity access. This not only impacts SDG 7 but also enables several other SDGs, including SDG 10 and SDG 8.



As part of its effort to help bring sustainable and affordable electricity to homes using off-grid renewable energy, the World Bank Group set up Lighting Global initiative with the intention of bringing sustainable and affordable electricity to homes using off-grid renewable energy. Its quality assurance programme relies upon IEC Standards to specifies the minimum criteria that a quality product must meet and the detailed instructions for carrying out product sampling and testing.

Because the market for off-grid, renewable energy products is embryonic, international standards can provide a catalyst for building trust between manufacturers, consumers, and governments. They bring credibility to the technologies while also protecting consumers. Manufacturers benefit from harmonized regulations and a reduction in barriers to trade that allow them to enter new markets.

Case study: the circular economy and material efficiency

Circular economy can potentially contribute to achieving a significant number of SDG targets, including the ones that relate to the use or management of natural resources. Twelve of the SDGs are linked (directly or indirectly) to the management of natural resources; SDG 12 and SDG 7 resonate strongly with IEC activities in this area.

The circular economy is based on the principles of reducing and eliminating waste and pollution through intelligent design and to regenerate natural resources. The aim is to keep products and materials in use for as long as possible. Resource efficiency, a core tenet of a circular economy, expresses how natural resources can be used to deliver sustainable development while minimizing environmental impact.

Material efficiency is an essential part of the circular economy. It consists of the preservation of materials by making products more durable and repairable. It also facilitates the recovery and recycling of material at the end of the product life. The ultimate objective of material efficiency is to keep materials in use for as long as possible – and potentially forever.

Strategies associated with longer product lifetimes while using fewer natural resources include designing products that last much longer than they do today while using fewer resources, ensuring that products can be reused, repaired, upgrade, refurbished, and remanufactured, and finally, the materials recycled. However, there is significant loss in the value of a product when it is put in the waste stream. For this reason, product and component recycling should be a last resort after applying lifetime extension strategies.

IEC has published a number of standards that support material efficiency. For example, IEC 62309 examines the dependability of products containing used parts, and IEC 63077 specifies the process for ensuring the performance and safety of refurbished medical imaging equipment. Standards currently under development address product circularity in the design of products and the refurbishment of medical equipment and rotating machinery.

New standards will also be needed in order to ensure product safety, performance and reliability for refurbished and remanufactured products, and issues such as data removal and security will need to be addressed as products are reused and change ownership. Standardized methods and tools to assess aspects such as the proportion of reused components or recycled content in products, or how to assess the ease or difficulty to repair or remanufacture a product will also be necessary. As we move towards a circular economy, standards have a vital role to ensuring sustainable development for all.

Further examples of IEC contributions

For a detailed overview of IEC work related to individual SDGs listing IEC technical committees and examples of relevant standards, please consult the IEC briefing paper *Contributing to Sustainable Development Goals* which is regularly updated. Below are some examples of the work by individual IEC technical committees and subcommittees:

Electrical equipment and systems for railways

IEC TC 9 develops and maintains several standards related to rail transportation, which is a major contributor to sustainable urbanization. Some standards specifically address SDG 11 indicator 11.2: Safe, affordable, sustainable transport systems. Some relevant standards:

- IEC 62128 series, *Railway applications – Fixed installations – Electrical safety, earthing and the return circuit*
- IEC 62267 series, *Railway applications – Automated urban guided transport (AUGT) – Safety requirements*
- IEC 62278 series, *Railway applications – Specification and demonstration of reliability, availability, maintainability and safety (RAMS)*
- IEC 62864-1, *Railway applications – Rolling stock – Power supply with onboard energy storage system – Part 1: Series hybrid system*

IEC TC 9 also impacts and improves the delivery of SDG 9 indicator 9.1: Develop quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all, and indicator 9.4: Upgrade and retrofit clean and environmentally sound technologies and industrial processes.

Maritime navigation and radiocommunication equipment and systems

IEC TC 80 work on maritime navigation and radiocommunication contributes to SDG 14. Given that conventional shipping is one of the biggest contributors to marine pollution, electrification of shipping at sea and when anchored in harbours, during loading and unloading of goods, can significantly contribute to reducing pollution and help protect marine life. Relevant standard:

- IEC 61924-2, *Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems – Part 2: Modular structure for INS (Integrated Navigation System) – Operational and performance requirements, methods of testing and required test results*

Measuring equipment for electrical and electromagnetic quantities

IEC TC 85 Standards related to measuring equipment and data gathering systems, and power quality assessment are relevant to SDG 7. Using products related to these standards allows to monitor energy usages, detect inefficient operation, etc. Some relevant standards:

- IEC 61557-12, *Electrical safety in low voltage distribution systems up to 1 000 V AC and 1 500 V DC – Equipment for testing, measuring or monitoring of protective measures – Part 12: Power metering and monitoring devices (PMD)*
- IEC 62974-1, *Monitoring and measuring systems used for data collection, gathering and analysis – Part 1: Device requirements*
- IEC 62586 series, *Power quality measurement in power supply systems*

Environmental standardization for electrical and electronic products and systems

A number of IEC TC 111 Standards are relevant to achieving the SDG 3, SDG 6, SDG 8, SDG 11, SDG 12, SDG 13, SDG 14, SDG 15 and SDG 16.

- IEC 62474 on substances declaration allows to identify the hazardous substances contained in electric and electronic equipment (EEE), including substances banned or restricted in medical devices. Addresses SDG 3, SDG 6, SDG 8, SDG 12, SDG 14, SDG 15 and SDG 16.
- IEC 62430 on environmentally conscious design of products. Addresses SDG 8, SDG 11, SDG 13, SDG 15 and SDG 16.
- IEC 62635 on end of life information of EEE allows for a clean and environmentally friendly and optimized end of life treatment. Addresses SDG 8, SDG 11, SDG 14 and SDG 15.
- IEC 62321 series provides test methods to use a standardized method to measure the content of 10 different substances. Addresses SDG 3, SDG 6, SDG 11, SDG 12, SDG 14, SDG 15 and SDG 16.
- IEC 63000 provides technical documentation to assess conformity with substances declaration. Addresses SDG 11, SDG 12, SDG 15 and SDG 16.
- IEC 62725, IEC 62726 on greenhouse gas emissions. Address SDG 13, SDG 15 and SDG 16.

Additional IEC technical committee work supporting the SDGs

The work of IEC TC 119 on printed electronics contributes towards SDG 8, covering several indicators.

IEC TC 106 work on radio frequency safety testing for 5G is relevant to SDG 8. It has a range of test applications for 5G. The work of IEC TC 25 is relevant to SDG 7 indicator 7A: Enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.

Regarding energy efficiency, information about the standby mode on household and similar electrical appliances is developed by IEC TC 59 and IEC TC 100 for audio, video and multimedia systems and equipment. They are relevant to SDG 7.

IEC TC 91 on electronics assembly technology contributes to SDG 7, SDG 9 and SDG 12. Additionally, IEC 61190-1-3 on lead-free soldering is relevant to SDG 12 indicator 12.4: Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

Benefits to IEC stakeholders

Industry

Many companies have initiatives focused on sustainability, equality and climate. Some have specifically used the SDGs to create or align their goals and to make clear which ones they are addressing and how. Others have already established goals that they connect to an SDG.

Many industries also support foundations and other multi-party groups to advance SDGs. The IEC has undertaken a review of industrial initiatives based on information made publicly available by various manufacturers and industry foundations. Conclusions gleaned from this review highlight the importance of identifying opportunities where standardization and CA systems can assist and collaborate with innovative companies.

While some manufacturers have made significant efforts towards addressing the SDGs, others may have a more limited response. Some industries may initially see the imposition of UN-defined SDGs as a threat to their operations. However, these goals are increasingly being viewed by the public and governments as essential prerequisites to the offer of their products and services, and key to the maintenance of their reputation.

Furthermore, it is recognized that demonstrating their actions against SDGs will require more than marketing endeavours; concrete actions must be validated using measurable metrics. The IEC can fill an important role in ensuring a level international playing field for industrial players, and a means by which performance to SDGs can be demonstrated to the public through IEC International Standards, and testing and certification.

Governments

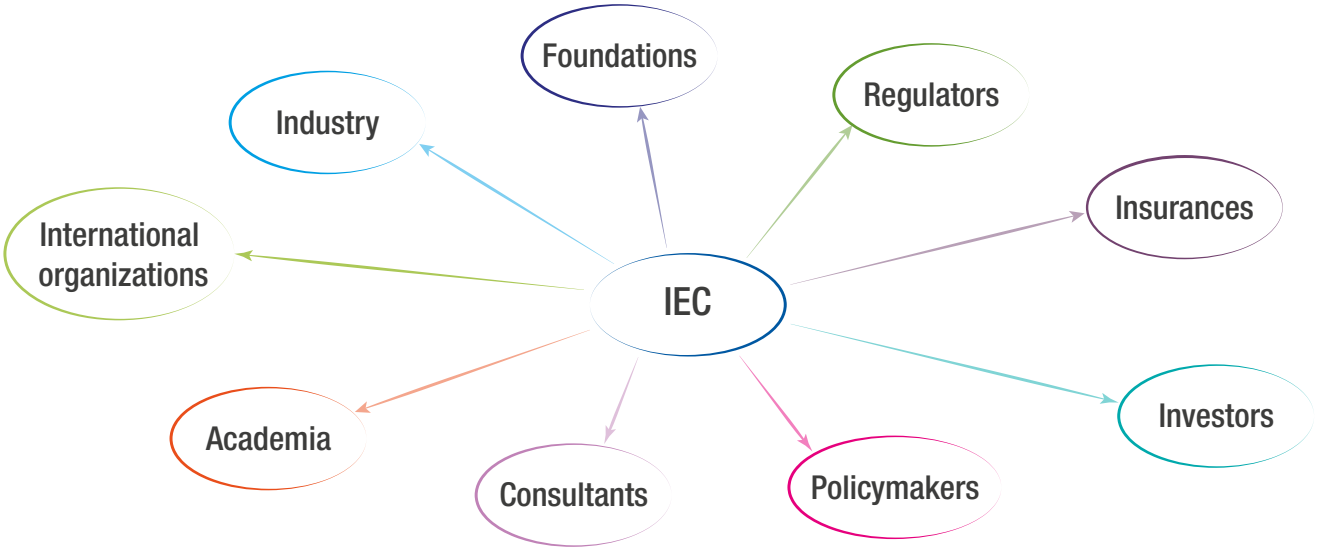
Regulators and policymakers can rely on IEC International Standards to set the safety, security and reliability requirements for quality infrastructure in energy generation, water management, healthcare, education, transportation, manufacturing and more. IEC work supports good governance and allows regulators to enforce legislation that helps protect populations from unsafe products and environmental or health hazards. IEC International Standards provide the technical foundation that allows countries to increase national innovation and economic productivity, as well as upgrade and retrofit cleaner and environmentally sound technologies and industrial processes. IEC CA Systems allow governments to verify that systems are properly installed, manufacturer promises are kept, and consumers are protected from dangerous or counterfeit products.

IEC Standards and CA Systems provide tools to help governments achieve the SDGs. When IEC work is included in SDG policy decisions, the issues of quality, safety and risks are more manageable and successful projects can be more easily replicated.

International organizations, NGOs, foundations and development agencies

When UN agencies include IEC standardization and CA work in SDG-related policies and initiatives that are underpinned by electrical, electronic and information technologies, they can be implemented in a more efficient way. Outcomes are more reliable, affordable, safe and interoperable in the short and long term. For example, organizations such as the World Bank reference open international standards in their loans and grants while the World Trade Organization (WTO) invites signatories to the Technical Barriers to Trade (TBT) Agreement to adopt international standards.

Communicating about the SDGs to all IEC stakeholders



The IEC has contributed for many years to SDGs, long before this term was coined. However, due to the highly technical nature of IEC work, lay people, who increasingly lead discussions on these topics, are not necessarily aware of the fact that the IEC provides the foundation for the electrical and electronic technologies that underpin all SDGs. One element that further complicates communication efforts is that most IEC Standards are not easily attributable to individual SDGs; technologies often reach across many different SDGs. IEC technical committees may not always be fully aware of how and which SDG is impacted by their work.

In addition, the SDGs relate to the IEC mission to achieve worldwide use of IEC International Standards and CA Systems that ensure the safety, efficiency, reliability and interoperability of electrical, electronic and information technologies, to enhance international trade, facilitate broad electricity access and enable a more sustainable world. This mission is fundamental to IEC members and to many of the IEC external stakeholders such as policymakers, regulators, etc. and helps achieve the SDGs. However, the link between the IEC mission and the SDGs is not always fully understood.

As a result, the IEC will undertake a comprehensive outreach programme to help the IEC community and external stakeholders better understand the integral role the IEC plays in achieving the 17 SDGs. At the same time, the IEC is continuously encouraging its technical committees and CA systems to identify and further increase contributions to individual SDGs.

Making IEC work more accessible

IEC Standards are written for and used by experts. Their titles and content are often too technical for lay people. These standards also generally do not clearly make the link with overarching systems or societal challenges.

Since 2016, the IEC has developed use cases to illustrate how certain technologies impact targets of individual SDGs and the role IEC Standards play. Going forward, individual IEC technical committees will be asked to contribute to link IEC work further and very concretely with individual SDGs.

Next steps for the electrotechnical community

The SDGs are undoubtedly highly meaningful for our global society. Global leaders are focusing on development, environment and well-being and the SDGs seem to be the perfect way to channel global action and a step in the right direction.

Technology has played a vital role in bringing global development to the present level. It has facilitated many tasks, increased productivity and well-being and has brought greater connectivity. However, technology has had negative side-effects on society, and particularly on the environment.

In the 21st century, technology can play a pivotal role in enabling countries to achieve their SDG targets. To do this, IEC will work rigorously to understand and update its systems, processes and communications. The IEC community will need to continually examine its offerings so that it can best respond to the evolving needs of the global community.

About the IEC

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

The IEC, headquartered in Geneva, Switzerland, is the world's leading publisher of international standards for electrical and electronic technologies. It is a global, independent, not-for-profit, membership organization (funded by membership fees and sales). The IEC includes 173 countries that represent 99% of world population and energy generation.

The IEC provides a worldwide, neutral and independent platform where 20 000 experts from the private and public sectors cooperate to develop state-of-the-art, globally relevant IEC International Standards. These form the basis for testing and certification, and support economic development, protecting people and the environment.

IEC work impacts around 20% of global trade (in value) and looks at aspects such as safety, interoperability, performance and other essential requirements for a vast range of technology areas, including energy, manufacturing, transportation, healthcare, homes, buildings or cities.

The IEC administers four conformity assessment systems and provides a standardized approach to the testing and certification of components, products, systems, as well as the competence of persons.

IEC work is essential for safety, quality and risk management. It helps make cities smarter, supports universal energy access and improves energy efficiency of devices and systems. It allows industry to consistently build better products, helps governments ensure long-term viability of infrastructure investments and reassures investors and insurers.

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 electronic and electrical 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

Further information

For further information, please visit the IEC website at www.iec.ch. In the “Who we are” 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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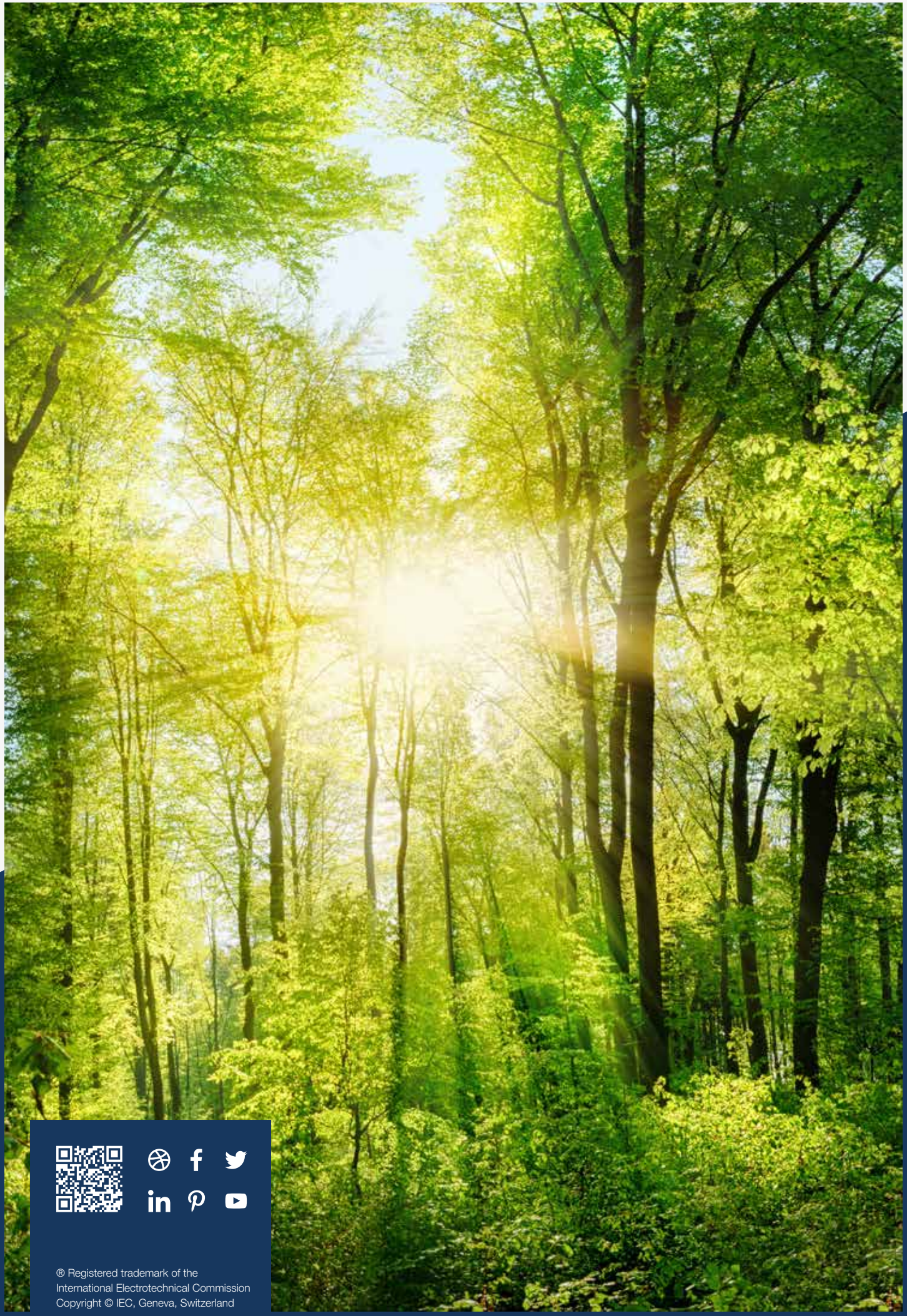

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