

The UN Sustainable Development Goals

and UL Standards & Engagement: A Report



Introduction

Adopted by all member states of the United Nations (U.N.) in 2015, the 2030 Agenda for Sustainable Development provides a detailed framework to help countries around the world end poverty, improve health and education, foster economic growth and contribute to global efforts to preserve and protect the environment. The agenda spells out 17 Sustainable Development Goals (SDGs), backed by 169 specific and quantifiable targets, providing civic and industry leaders with the tools they need to formulate and initiate individual efforts that support these important global imperatives.

Industry-accepted technical standards developed by UL Standards & Engagement and other

standards bodies can provide an important blueprint to help bolster the efforts of governments and non-governmental organizations (NGOs), international companies and businesses, advocacy groups and even consumers seeking to align their products, services and practices with the SDGs. In fact, in a recently completed study of more than 1,600 UL standards, we found that requirements in more than half of current UL standards either partially or fully align with specific measures needed to support the achievement of at least one SDG.

In effect, compliance with one or more UL standards can directly support an organization's contribution to the global effort to achieve the

goals set forth in the U.N. Agenda by its target date of 2030.

In this report by UL Standards & Engagement, we'll provide background on the SDGs and discuss the role of international companies in achieving the goals set forth in the agenda. We'll then share details of our research into UL standards, including the quantitative and qualitative methods we used to determine which UL standards directly or indirectly align with one or more SDGs. Our report will conclude with recommendations on how companies can use the results of our research to ensure that their products, services and practices support the 2030 Agenda for Sustainable Development.

Toward a Prosperous, Just and Sustainable Future

Over the past 50 years, efforts to achieve sustainable development have blossomed from early, independent grassroots movements focused primarily on the environment and poverty, to far-reaching, integrated initiatives by governments, nonprofit organizations and even major corporations. Today, sustainability is not just about reducing greenhouse gas emissions or plastic waste, or eliminating the use of potentially harmful pesticides that pollute our waterways. Instead, sustainability in the twenty-first century encompasses a broad range of issues, including ready access to healthcare, improved educational opportunities for underserved populations and providing economic security to everyone.

This broader sustainable development effort has resulted in a number of significant successes over the past 20 years. To cite just a few examples from data collected by the U.N. Department of Economic and Social Affairs, deaths of children under the age of five dropped by nearly 50% between 2000 and 2017, driven in large part by greater access to critical vaccines. More than 90% of the world's population now has access to electricity. And the total number of marine-protected areas has doubled since 2010.¹

But, after decades of slow but steady progress, most of these efforts were forced to take a back seat in recent

years, as leaders from all corners of society focused their efforts on combatting the global COVID-19 pandemic and addressing to the extent possible the massive and devastating consequences levied on society. Critical quarantine measures imposed significant economic hardships on both workers and businesses, the impact of which was further compounded by shortages of essential goods and supply chain challenges. And the lack of access to effective vaccines, especially in underdeveloped countries, only served to highlight the gross global inequities in the availability of essential healthcare services.

Against this backdrop, much of the progress achieved in sustainability efforts has stalled or, worse, backtracked. Citing more recent statistics from the U.N. Department of Economic and Social Affairs, the COVID-19 pandemic pushed 93 million more people into extreme poverty in 2020. The disruption in essential health services resulted in the first decrease in immunizations in a decade, leading to an unprecedented increase in deaths from tuberculosis and malaria. And, as if these challenges weren't enough, current global conflicts, including the war in Ukraine, have displaced more than 100 million people from their homes, while also disrupting essential supply chains and exacerbating economic inflation.²

Environmentally, we are confronted almost daily with news reports of extended heat waves, cataclysmic



wildfires and prolonged droughts affecting the lives of billions of people worldwide. The increasing frequency of these events sends a clear message that the climate crisis is real and will require a massive, concerted effort to mitigate its future impact.

As long as people have populated our planet, we have endured an endless number of seemingly devastating events that threatened our very existence. Yet, in every case, we have been able to leverage our strengths and marshal our resources, technical expertise and know-how to find a path forward. Facing present and future sustainability challenges head-on is not just essential to our survival; doing so offers us an opportunity to help create a world in which our most valuable natural and environmental resources are protected, people are assured access to essential healthcare and educational opportunities, and economic security is a given for all.

¹ "The Sustainable Development Goals Report 2019," produced by the United Nations Department of Economic and Social Affairs, 2019. Available at <https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf> (as of 12 September 2022).

² "The Sustainable Development Goals Report 2022," produced by the United Nations Department of Economic and Social Affairs, 2022. Available at <https://unstats.un.org/sdgs/report/2022/The-Sustainable-Development-Goals-Report-2022.pdf> (as of 12 September 2022).

The UN Sustainable Development Goals

The origins of the U.N. Sustainable Development Goals can be traced back to the June 1992 Earth Summit in Rio de Janeiro, Brazil. There, more than 178 U.N. member states adopted the Rio Declaration on Environment and Development (also known as Agenda 21), which mapped out a comprehensive plan of action to address human impacts on the environment. The Rio Declaration also served as a call to action to develop new strategies and approaches to support sustainability, and ultimately led to the creation of the U.N. Commission on Sustainable Development.

Over the succeeding decades, U.N. member states continued their efforts to build support for their sustainability goals while also



expanding their scope. At the U.N. Millennium Summit in September 2000, U.N. member states adopted the Millennium Declaration, which set out eight Millennium Development Goals (MDGs) addressing not just environmental sustainability but also extreme poverty and hunger, universal primary education and gender

equality. This initiative gained further traction at the U.N. Conference on Sustainable Development in June 2012, where member states launched the process to develop specific Sustainable Development Goals (SDGs) built on the foundation provided by the earlier MDGs.

These efforts culminated in September 2015 when the 193 U.N. member states unanimously adopted the 2030 Agenda for Sustainable Development. Under the umbrella principles of “People, Planet, Prosperity, Peace and Partnership,” the 2030 Agenda sets forth an ambitious framework for both governments and private-sector entities to help achieve the vision of a prosperous, just and sustainable future for all.

At its heart, the agenda details 17 SDGs, as follows:

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| <ol style="list-style-type: none"> 1. No poverty – end poverty in all its forms everywhere. 2. Zero hunger – end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. 3. Good health and well-being – ensure healthy lives and promote well-being for all at all ages. 4. Quality education – ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. 5. Gender equality – achieve gender equality and empower all women and girls. 6. Clean water and sanitation – ensure availability and sustainable management of water and sanitation for all. 7. Affordable and clean energy – ensure access to affordable, reliable, sustainable and modern energy for all. | <ol style="list-style-type: none"> 8. Decent work and economic growth – promote sustained, inclusive and sustainable economic growth; full and productive employment; and decent work for all. 9. Industry, innovation, and infrastructure – build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation. 10. Reduce inequalities – reduce inequality within and among countries. 11. Sustainable cities and communities – make cities and human settlements inclusive, safe, resilient and sustainable. 12. Responsible consumption and production – ensure sustainable consumption and production patterns. 13. Climate action – take urgent action to combat climate change and its impacts. 14. Life below water – conserve and sustainably use the oceans, seas and marine resources for sustainable development. 15. Life on land – protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss. 16. Peace, justice, and strong institutions – promote peaceful and inclusive societies for | <p>sustainable development; provide access to justice for all; and build effective, accountable, and inclusive institutions at all levels.</p> <ol style="list-style-type: none"> 17. Partnerships for the goals – strengthen the means of implementation and revitalize the global partnership for sustainable development. <p>These 17 SDGs are supported by 169 individual targets and more than 200 indicators, which provide detailed benchmarks that allow leaders in government and industry to formulate specific sustainability initiatives to align their activities with the SDGs and to track their progress in achieving success.</p> <p>Since its adoption, the SDG framework has gained significant traction not just with governments and global corporations but also with companies of all sizes seeking to implement a comprehensive approach to sustainability in their businesses. The Global Reporting Initiative (GRI), a leading global organization on sustainability reporting, estimates that 75 percent of the more than 15,000 companies participating in the U.N. Global Compact Initiative, which include small and medium-sized enterprises, are currently engaged or plan to be engaged in sustainability efforts that support the SDGs.³</p> <p>A Brief History of UL Standards & Engagement</p> <p>UL Standards & Engagement was founded in Chicago, IL, in 1894 by William Henry Merrill, a graduate of</p> |
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³ “Business Reporting on the SDGs: An Analysis of the Goals and Targets 2022,” a report by the Global Reporting Initiative, 2022. Available at <https://www.unglobalcompact.org/library/5361> (as of 12 September 2022).

the electrical engineering program at the Massachusetts Institute of Technology (MIT). Following graduation, Merrill joined the Boston Board of Fire Underwriters and was assigned to assess the fire risks associated with construction efforts at the World's Columbian Exposition in Chicago. During his work there, Merrill was soon convinced of the need to establish an independent testing laboratory to assess the electrical safety of buildings, installations, and equipment.

Merrill's new company, initially named the Underwriters Electrical Bureau, and later, Underwriters Laboratories and UL Standards & Engagement, conducted its first safety tests on non-combustible insulation in March 1894. Merrill quickly realized that achieving electrical safety required not only thorough testing but also the availability of detailed safety standards that could help companies across industries design and build new products that would ensure acceptable levels of safety during use. Merrill's insight ultimately led to the publication of the first UL Standard for Safety in 1903, addressing safety issues related to tin-clad fire doors used in public spaces, such as warehouses, schools and hospitals.

Over the ensuing century, UL Standards & Engagement has significantly expanded its catalogue of safety standards to encompass almost every type of product imaginable, from consumer and commercial technologies and industrial systems and equipment to automobiles, military and aerospace applications, essential infrastructure



and cybersecurity protection. These industry-accepted safety standards help to assist companies in their mission to bring safe and healthy products to the global marketplace.

Today, UL Standards & Engagement maintains a catalog of more than 1,400 individual standards and 200 other guidance documents, numbers that continue to grow each year. During 2021, these standards were viewed or downloaded more than 165,000 times by more than 20,000 stakeholders from 91 countries. The UL Mark, which signals compliance with the technical requirements of one or more UL standards, is applied to over 22 billion products each year,⁴ signaling the widespread acceptance of UL standards by global companies in nearly every industry.

The UL standards development process includes more than 4,000 individual regulators, industry experts, and other stakeholders

from 60-plus countries around the world who participate in one or more of our 450 active technical committees (TCs). Their work is supported by an additional 50,000 registered users on our Collaborative Standards Development System (CSDS) who propose ideas for new or revised standards, and comment on draft standards in process. The TCs address and incorporate these comments and ultimately vote to accept new or updated standards. As a result of this comprehensive approach to standards development, UL Standards & Engagement is accredited as a standards development organization (SDO) by both the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC). We are also authorized to develop standards in Mexico by the Dirección General de Normas (General Bureau of Standards).

⁴ "The Ultimate Guide to UL Labels and Marks," an article posted to the website of Metalphoto of Cincinnati, July 31, 2022. Available at <https://www.mpofcinci.com/blog/ultimate-guide-to-ul-labels-and-marks/> (as of 12 September 2022).

The UL Standards & Engagement SDG Alignment Project

UL Standards & Engagement strongly supports the vision of the U.N. 2030 Agenda for Sustainable Development, as well as the agenda's 17 SDGs. We also understand the challenges facing governments and industry in evaluating how their current practices align with the SDGs and in determining what changes they can make to directly contribute to the global sustainability effort. While no one approach or solution is right for everyone, we believe that UL standards can help many organizations strengthen their existing sustainability efforts while offering a potential roadmap for those seeking to implement new sustainability initiatives in keeping with the intent of the SDGs.

Although our standards portfolio includes approximately 60 standards for sustainability, none of the currently available standards were developed to directly address the SDGs. Rather, they have been independently developed in collaboration with industry leaders, regulatory officials



and other stakeholders to address specific aspects of product and process sustainability. Nonetheless, the objectives of the requirements and specifications presented in many of our standards directly or indirectly align with those of SDGs.

To address this, we set out in 2022 to thoroughly research those connections and to document in detail the specific standards that directly support one or more SDGs. Our goal with this initiative was twofold. First, we wanted to help

users of UL standards understand these connections so that they can leverage them in achieving their own efforts supporting sustainable development. Second, we wanted to identify important aspects of the SDGs that are not addressed in current standards and could serve as a focal point for future standards development efforts.

Our research methodology for this project combined two complementary aspects integrating both quantitative and qualitative

analysis. We started with an algorithmic evaluation of UL standards to identify potential similarities between the scope statement of an individual standard and one or more SDGs and their supporting individual targets. Rather than relying on a single algorithm, this process involved the use of several different algorithms to substantiate identified similarities and to help eliminate biased findings that might otherwise occur.

Standards that were identified through the algorithmic analysis as having a potential level of association with an SDG were then evaluated by a team of subject matter experts (SMEs) to verify those findings. If an individual SME agreed with the algorithmic assessment regarding an identified association between a standard and an SDG, the SME would then determine the relative strength of that association, characterizing it as either strong, moderate or weak.

This aspect of our research involved qualitative judgments based on the knowledge and experience of the SMEs involved in the evaluation. Therefore, similar to our use of multiple algorithms, a team consisting of SMEs, program managers and project managers compared and discussed their findings and their assessment of the relative strength of the association between the standard and an SDG.

If the SMEs agreed that an association does indeed exist, they recorded their findings. If the SMEs had different assessments regarding the association, they discussed their individual findings and the rationale



for their assessment with the goal of reaching an agreement. This approach helped to ensure the thoroughness and integrity of the qualitative assessment.

Our Research Findings and Their Application

Our research into the potential connections between UL standards and the U.N. SDGs revealed a significant alignment between the goals of the 2030 Agenda for Sustainable Development and the requirements and specifications found in UL standards. To date, we have identified more than 950 individual cases in which a UL standard supports one or more SDGs, with each unique standard associated with an average of at least two SDGs. Further, for each of the 17 SDGs, there is at least one UL standard that can be used to support efforts to achieve the SDG's identified targets.

The SDGs with the largest number of associations with individual UL standards include:

- SDG 11, Sustainable Cities and Communities, with 154 individual standards associations
- SDG 7, Affordable and Clean Energy, with 130 associations
- SDG 12, Responsible Consumption and Production, with 120 associations
- SDG 9, Industry, Innovation and Infrastructure, with 100 associations

In addition, SDG 7, Affordable and Clean Energy, had 41 strong associations, the SDG with the largest number of strong associations, followed by SDG 13, Climate Action, with 22 strong associations, and SDG 11, Sustainable Cities and Communities, with 16 strong associations.

Here are details on several of the nearly 1,000 individual standards associations that we identified:

SDG 3, Good Health and Well-Being, and UL 4600, the Standard for Safety for the Evaluation of Autonomous Products

UL 4600 addresses the safety principles, risk mitigation tools and lifecycle processes to be applied to the development and manufacturing of vehicles that can be operated in an autonomous mode. It is widely anticipated that the autonomous vehicles will ultimately be safer than human drivers. The standard directly aligns with Target 3.6 of SDG 3, which establishes a goal of reducing by half the number of global deaths and injuries from road traffic accidents.

SDG 4, Quality Education, and UL 8750, the Standard for Safety for Light Emitting Diode (LED) Equipment for Use in Lighting Products

UL 8750 covers LED equipment that is an integral part of a luminaire or other lighting equipment. The requirements of this standard can be applied in support of Target 4.a of SDG 4, which mandates building and upgrading education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

SDG 7, Affordable and Clean Energy, and UL 9540, the Standard for Safety for Energy Storage Systems and Equipment

UL 9540 covers the safety requirements for energy storage systems that provide electrical energy local/area electric power system (EPS) when needed. The types

of energy storage covered under this standard include electrochemical, chemical, mechanical and thermal. Storage of intermittent energy production systems, such as wind and solar, are advanced when energy storage systems are used as part of the energy ecosystem.

SDG 11, Sustainable Cities and Communities, and UL 2594, the Standard for Safety for Electric Vehicle Supply Equipment

Several of the targets for SDG 11 promote the use of sustainable transport systems and the reduction of air pollution associated with transportation. Vehicle electrification will be a key component in efforts to make our transportation networks more sustainable and reducing emissions that contribute to poor air quality. UL 2594 and several other standards associated with electric vehicles provide requirements to help ensure that the electric vehicle charging infrastructure is safe and scalable.

SDG 12, Sustainable Consumption and Production, and UL 1974, Standard for Evaluation for Repurposing Batteries

UL 1974 anticipates the need to repurpose battery packs, modules and cells for new purposes when they are no longer useful for their original intended purpose. An example of this concept is to re-use electric vehicle battery packs in stationary energy storage applications. This standard supports multiple SDGs, including SDG 12 and SDG 7, Affordable and Clean Energy, by diverting a portion of a potentially large waste stream to a new purpose that further enables sustainable electricity generation.

SDG 15, Life on Land, and UL 3420, Standard for Sustainability for Plastic Packaging and Packaging Components

SDG 15 aims to halt the degradation of terrestrial ecosystems, including inland freshwater systems. UL 3420 provides guidance on limiting regulated contaminants, promoting the reuse and recyclability of materials and extending the useful life of plastic packaging. Promoting these characteristics of plastic packaging can help reduce the volume of plastic that is destined for landfills, thus supporting terrestrial ecosystems.

As these examples clearly illustrate, many current UL standards provide an effective roadmap for supporting the achievement of individual targets under one or more SDGs. This means that companies with products and services that have been certified to applicable UL standards are not only helping to ensure the safety of those products in use, but they are also taking direct steps to support global sustainability efforts as envisioned under the U.N. sustainability agenda.

What's Ahead?

UL Standards & Engagement will continue research in this critical area to identify additional associations between UL standards and the U.N. SDGs, and will provide updates to this report as they become available. In addition, we'll also evaluate potential options for modifying our current standards development and revision processes to include discussions of relevant SDGs, and work to incorporate more direct consideration of SDGs and their individual targets in our deliberations.

Importantly, the results of our research to date have uncovered key aspects of sustainability represented by the SDGs that are not currently addressed by any UL standard. This presents a unique opportunity to work collaboratively with our stakeholders to develop new standards specifically intended to drive direct support for these SDGs. Doing so will help to increase our collective understanding of the potential global impact of achieving the SDGs, while also providing a clear plan of action for



aligning individual activities and efforts around a collective purpose.

The SDGs also include strategies to reduce inequality and promote gender equity. UL Standards & Engagement has launched the “Standards for All” initiative to promote the incorporation of inclusive language, improved diversity on technical committees, the

development of gender responsive standards and the reduction of barriers to accessibility that may exist in our standards. Our “Standards for All” initiative will transform our standards portfolio as well as our process for standards development and will contribute to efforts to reduce inequality and promote gender equity.

Through these and other efforts, UL Standards & Engagement is committed to helping to make the vision of the U.N. 2030 Agenda for Sustainable Development a reality. For more information about our work, go to [ULSE.org](https://ulse.org). Or write to us at Standards@UL.org.

Conclusion

In times of uncertainty, challenges abound. Yet, uncertainty is also one of the greatest catalysts for effecting positive change. Our efforts to help achieve the goals of the U.N. 2030 Agenda for Sustainable Development will certainly present us with unforeseen challenges. But the U.N. SDGs also offer us a picture of a brighter future and serve as a source of hope that we can successfully overcome the challenges that we face regarding global sustainability, health, financial security and equity for all, and leave future generations a world that is safer, more secure and sustainable.