Sustainability Report 2022

Contents

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01
Sustainability at ABB

CEO letter

Dear stakeholders,

The year 2022 was one of crises and setbacks for society. While governments were preoccupied with the war in Ukraine, the energy crisis and rising inflation, greenhouse gas (GHG) emissions continued to rise. Against that backdrop, it is clear that ABB's purpose – to enable a more sustainable and resource-efficient future with our technology leadership in electrification and automation – is more relevant than ever, especially when it comes to tackling climate change.

In terms of sustainability, ABB made solid, steady progress toward the goals for 2030 that we established two years ago. Our people also distinguished themselves and ABB with their generous contributions to the humanitarian aid efforts of the International Red Cross in Ukraine, which were matched by the ABB Group, as well as many other local initiatives and engagements at the community level. You can read about some of these in the chapter, "We promote social progress".

Enabling a low-carbon society

Among our Group's sustainability highlights for 2022 was our progress on the first pillar of our sustainability strategy: enabling a low-carbon society. We reduced our GHG emissions by 43 percent and helped our customers reduce or avoid emissions through our leading electrification and automation technologies. We also defined a new emissions reduction target for our supply chain, covering suppliers that account for 70 percent of our procurement spending. Finally, to improve our accountability for reducing our value-chain emissions, we set mid-term targets, to be met by 2025, for our suppliers' and our own operations.

This report contains many examples of how we are contributing to a low-carbon society and supporting the Paris Agreement's target of limiting the rise in global temperatures to 1.5 degrees Celsius. One that stands out is a project in Norway, where we helped a wood pulp factory reduce its annual emissions by 14,000 tons, equivalent to taking 7,000 conventional cars off the road. I urge you to take a closer look at our case studies throughout the report to see how we are using technology to shrink ABB's

environmental footprint while working with our customers and suppliers to reduce and avoid emissions across our value chain.

Circularity, social progress and integrity

While we are particularly proud of our progress on the first pillar of our 2030 sustainability strategy, we also continued to advance on the other three pillars: preserving resources, promoting social progress, and creating a culture of integrity and transparency along the extended value chain.

In 2022, we strengthened ABB's circularity approach by defining clear key performance indicators (KPIs) for every stage of the product life cycle, from design to end-of-life. One important initiative was the launch of our EcoSolutions™ label, which provides full transparency into the circularity value and environmental impact of a product, verified by a third party. In the "We preserve resources" chapter, you can find more examples of how we are putting circularity into practice in our products and processes and with our customers.

When it comes to social progress, we achieved many concrete gains, including improving workplace safety, increasing gender diversity in senior management, and enhancing our human rights due diligence process. At the same time, by supporting community-building in areas such as education, diversity and inclusion, and care in the community, we are empowering people to take actions that will make a positive difference to their lives and communities and benefit future generations.

The report's section on integrity at ABB details the strides we have made toward our 2030 goal of enhancing our risk-based approach that will promote integrity across our organization. This included the management of third parties and training to keep awareness high.

Technology cannot solve all of the world's challenges. But our experience at ABB shows that, with clear goals and targets, and engaged and motivated people with the right skills and expertise, we can develop and deploy solutions that will take us a long way toward creating a sustainable society.

I want to thank our people for their contributions to our sustainability goals and for the work they have done, not just as employees but also in a private capacity, to support the shift to a sustainable society. And I want to thank all our stakeholders for your collaboration, support and trust.

Together, we are leading the way to a sustainable future.

Björn Rosengren
CEO, ABB Ltd

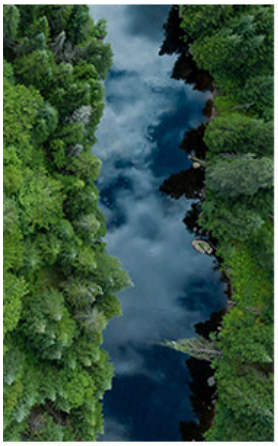
Sustainability strategy 2030

ABB is a global technology company whose purpose is to enable a more sustainable and resource-efficient future with our technology leadership in electrification and automation. Our solutions connect engineering know-how and software to optimize how things are manufactured, moved, powered and operated. Building on more than 130 years of excellence, ABB's ~105,100 employees are committed to driving innovations that accelerate industrial transformation.

At ABB, we believe that sustainable development represents progress toward a healthier and more prosperous world for future generations. To balance the needs of society, the environment and the economy, we act and embed a sustainable approach to business across our value chain, creating superior value for all of our stakeholders.

ABB's 2030 sustainability strategy is aimed at addressing the world's greatest challenges and at contributing to the achievement of the United Nations' Sustainable Development Goals (SDGs). We are confident we can have a greater impact by acting in coordination with our customers, suppliers and other stakeholders. Across this report, we provide specific case studies and indicate which SDGs they contribute to.

Our strategy is based on the following four pillars:

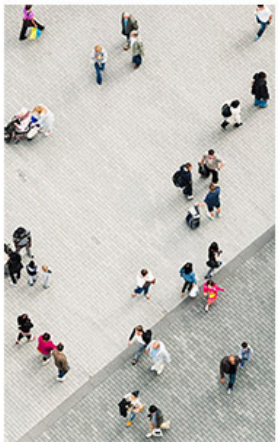


Enabling a low-carbon society

We partner with our customers and suppliers to reduce and avoid value-chain emissions, and we aim to make our own operations carbon-neutral by 2030.

Preserving resources

We aim to embed circularity across our value chain. Many of our solutions reduce waste, increase recycling and foster reusability.



Promoting social progress

We take care of our employees and promote social progress around the world. We strive to create safe, fair and inclusive working environments where people can succeed and develop, and we support community-building.

Creating a culture of integrity and transparency

We drive a culture of integrity and transparency across our value chain and take accountability for our actions.

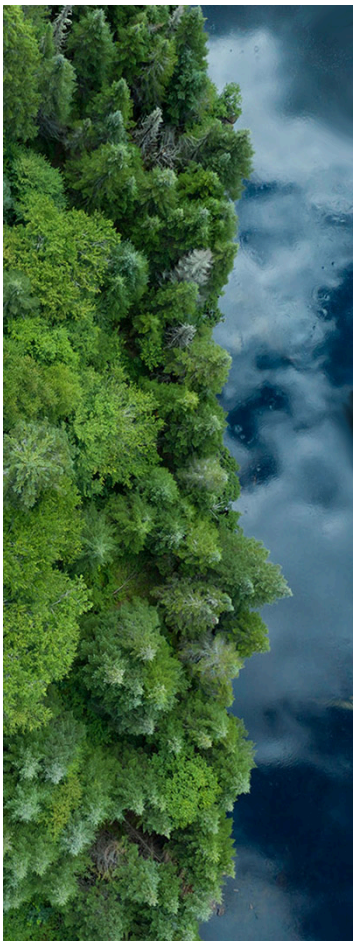
For each of these pillars, we have defined specific targets. In 2022, we fulfilled the commitment made in our 2021 Sustainability Report to set an emissions target for our supply chain. We will work with our main tier-one suppliers – which account for about 70 percent of our supply spending – to achieve a 50 percent reduction in their greenhouse gas emissions by 2030. To improve accountability, we also set mid-term targets to reduce and avoid emissions across our value chain by 2025.

Ultimate responsibility for ABB's sustainability strategy as well as the sustainability targets lies with the Board of Directors. For a detailed overview of ABB's Sustainability Governance, please refer to the section "Sustainability governance."

Progress against 2030 targets

Since the launch of our 2030 sustainability strategy in November 2020, we have made continuous progress toward our goals of enabling a low-carbon society, preserving resources, promoting social progress, and creating a culture of integrity and transparency along the extended value chain.

We enable a low-carbon society



We partner with our customers and suppliers in reducing and avoiding their emissions while reducing our own operational emissions with the aim of achieving carbon-neutral status by 2030. As we intend to have our targets validated against the Science Based Targets initiative's new Net-Zero Standard, we are no longer focusing on a limited amount of cases linked to the 100 megatons emissions' avoidance but rather on our complete portfolio of offerings.

Target: Carbon neutrality in own operations and own scope 1 and 2 GHG emissions reduced by at least 80 percent by 2030 compared with baseline year 2019

65%

reduction of own scope 1 and 2 GHG emissions since 2019

Target: Scope 1 and 2 GHG emissions of main tier-one suppliers covering 70 percent of our annual procurement spend reduced by 50 percent by 2030 compared to baseline year 2019

Target established

Target finalized and published in October 2022 and measurement of baseline and performance in progress

We preserve resources

By taking a systematic, company-wide approach to circularity, we are working to minimize the amount of resources we consume and to keep resources in productive use across ABB's value chain.

Target: Cover at least 80 percent of portfolio of products and solutions with circularity approach by 2030

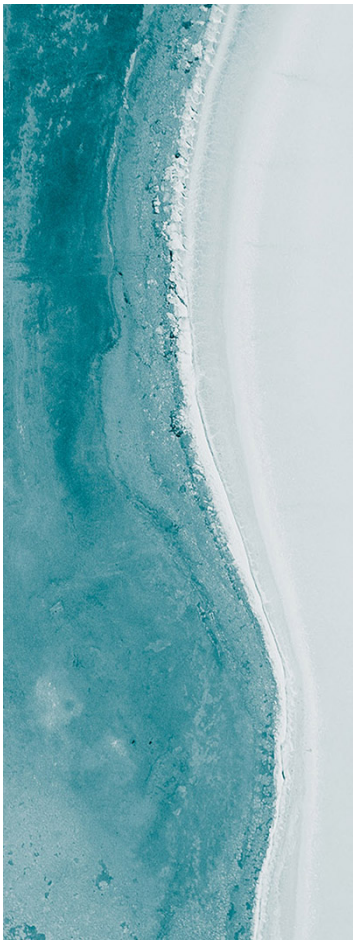
Refining approach

Clear alignment of circularity approach with regulations in progress

Target: Zero waste to landfill by 2030, where compatible with local conditions

32%

reduction of waste to landfill compared to baseline year 2019



We promote social progress

At ABB we are building safe, fair, equitable and inclusive working environments where our people can succeed and develop. We also support community development around the world while systematically focusing on social progress in our supply chain.

Target: Zero harm is caused to our people and contractors; aim for a yearly reduction in lost time from incidents (LTIFR value = 0 by 2030)

42%

reduction in lost-time injury frequency rate (LTIFR) since 2019

Target: Increase proportion of women in senior management roles to 25 percent by 2030

17.8%

women in ABB senior management

Target: Achieve a top-tier employee engagement score

76

employee engagement score (out of 100)

Target: Expand programs for community engagement

Guidance aligned

for emergency & disaster relief situations

We create a culture of integrity and transparency along the extended value chain

At ABB, we strive to do the right thing and be transparent along our value chain. We measure our performance not only by the results we achieve, but also by how we achieve them.

Target: At least 80% of spending on high-risk suppliers in focus countries covered by Sustainable Supply Base Management (SSBM) by 2025

22%

of spending on high-risk suppliers in focus countries covered by Sustainable Supply Base Management (SSBM)

Target: Implement management sustainability incentive with yearly target

2 out of 3

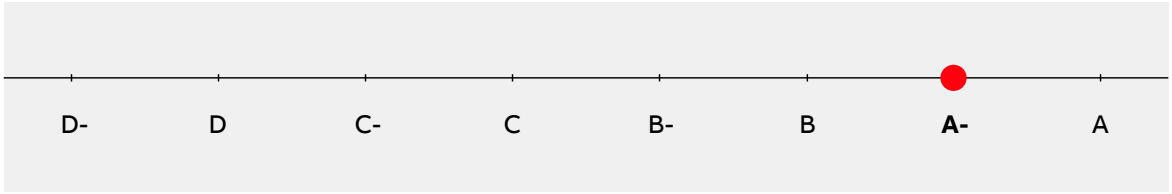
annual individual leadership goals must be linked to sustainability goals

ESG ratings

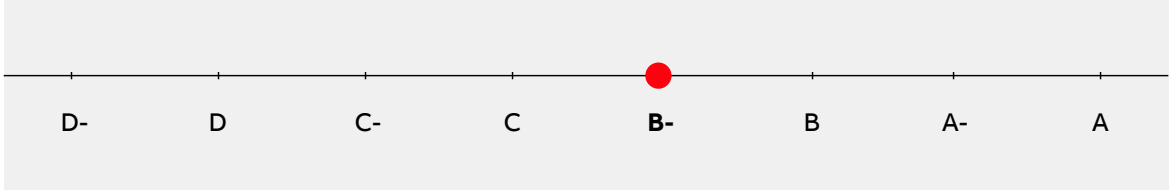
An environmental, social and governance (ESG) rating is a measure of a company's exposure to long-term environmental, social and governance risks. Because these risks have financial implications, ESG ratings are used by investors to gain a broader understanding of a company's long-term potential.

At the end of 2021, we conducted an internal review to identify the most relevant ESG ratings for ABB and its stakeholders. Based on these results, in 2022, the ABB Sustainability Board decided to reduce the number of rating systems in which we participate to six major ESG rating providers. You can read about the governance model in the chapter "Sustainability governance." These ratings are:

CDP Climate Change



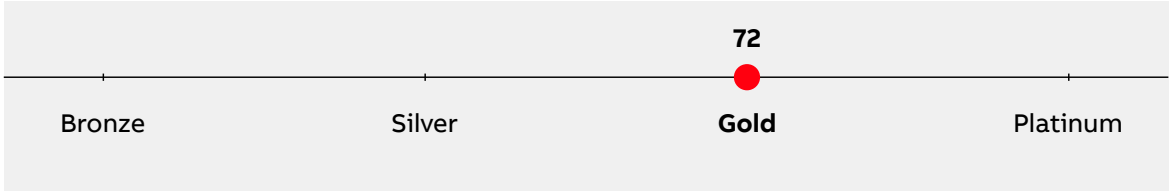
CDP Water



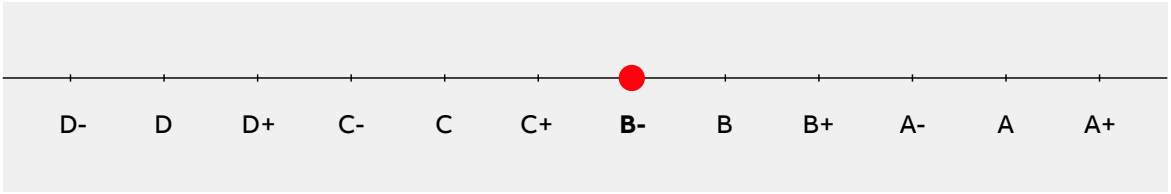
S&P GLOBAL ESG SCORE

Note: Sustainability Yearbook Member (within the top 15% of industry)

EcoVadis

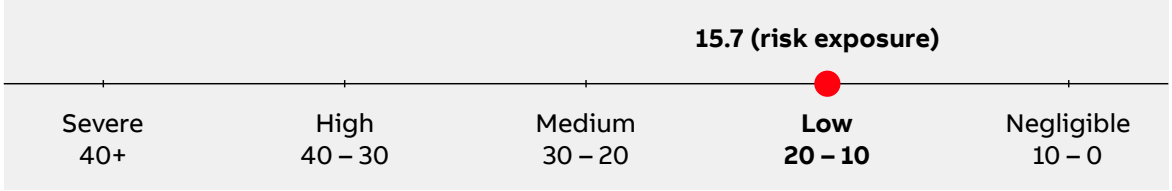


ISS ESG



MSCI

Sustainalytics



In 2022, ABB's performance in these seven ratings was stable overall. We will further strengthen our sustainability management processes through the ongoing implementation of our 2030 targets, programs and initiatives.

Sustainability governance

At ABB, responsibility for sustainability is clearly defined and covers all levels of the organization:

ABB's Board of Directors oversees the company's sustainability strategy and monitors progress toward and achievement of targets. The Governance & Nominations Committee (GNC) ensures that sustainability factors are holistically considered and integrated into the company's strategy and affirms a long-term commitment to sustainability goals, while the Compensation Committee ensures that ABB's remuneration policies are linked to the achievement of its sustainability targets.

The ABB Sustainability Board, comprising the Group Executive Committee, validates the sustainability strategy and its implementation as well as the resources required to deliver it. It is also responsible for reviewing and assuring strategic goals and ensuring that a sustainability culture is embedded in the company. The Chief Communications and Sustainability Officer, who is a member of the Group Executive Committee, has functional responsibility for sustainability and reports to the GNC on sustainability-related topics and progress.

The Sustainability Council, consisting of the Group Head of Sustainability and sustainability representatives from each of ABB's four business areas, is the operational body that oversees sustainability policies and programs, reviews developments and monitors progress toward our targets. The Sustainability Council makes recommendations on strategy, target deployment and performance reviews.

The four business areas are ultimately responsible for setting targets and coordinating action plans at the business area and division levels and ensuring performance management.

Materiality

ABB's purpose is to enable a more sustainable and resource-efficient future with our technology leadership in electrification and automation. Based on a meaningful dialogue and close cooperation with key stakeholder groups, we consistently work to shape and sharpen ABB's positions and policies to reflect the full range of our stakeholders' perspectives. This ongoing dialogue has reliably enabled us to identify the topics that are most material for both ABB and our stakeholders.

Stakeholder engagement

We maintain regular contact with our various stakeholder groups, including customers, employees and suppliers. We engage in a transparent dialogue with the capital markets to enable participants to make informed investment decisions on a timely basis. And we interact regularly with governments and civil-society organizations, as well as communities and external partners.

Customers

Our approach to business is customer-centric. We meet frequently with customers to discuss ABB's offerings and how we can address their needs, including the need to become more sustainable, achieve greater efficiency and reduce GHG emissions. Our experts share advice and build relationships of trust.

How we engage:

- Customer fairs
- Customer service
- Key account manager relationships
- Customer requests
- Sustainability partnerships

CASE STUDY

Energy Efficiency Movement

In 2021, ABB launched the Energy Efficiency Movement, an initiative that invites companies and organizations to make firm commitments to improving the energy efficiency of their operations.

ABB founded the movement because we believe that the benefits of greater energy efficiency go well beyond the fight against climate change. In our experience, energy efficiency not only contributes to environmental conservation and cleaner air and water but also serves as a platform for improving public health, enabling energy independence, and boosting stronger economic growth and development.

The Energy Efficiency Movement welcomes the participation of any organization that is committed to improving energy efficiency. Those interested in participating find that joining the movement is simple and straightforward: they pledge their commitment to improving energy efficiency and then act on it. The movement has grown rapidly since its launch, with 125 organizations already committed by the end of 2022.

Energy Efficiency Movement participants are encouraged to collaborate and establish partnerships within the movement for a more energy-efficient world, with the understanding that to make the world more energy efficient, all stakeholders should work together, leveraging their collective creativity and determination.

We also encourage participants to share their energy-efficiency-related best practices and solutions through their own communications channels, using the #energyefficiencymovement hashtag and the movement's symbol.

Investors

Investors and the broader financial community provide the capital and liquidity that enable us to run our business. We use a variety of communication channels and discussion platforms to explain our strategy and keep the investment community up to date on our financial and sustainability performance and outlook.

How we engage:

- Group reporting
- Press releases
- Investor Relations website
- Quarterly analyst and investor webcasts
- Investor roadshows and conferences
- One-on-one meetings
- Annual General Meetings
- Capital Markets Days

Suppliers

We rely on trusting and stable relationships with our suppliers to support our business. As partners, we work together to create shared value, drive continuous innovation and improve sustainability across the entire value chain.

How we engage:

- Town hall events for suppliers
- Procurement management
- Providing training and engaging in special projects on sustainability performance
- On-site evaluations
- Monitoring through our Sustainable Supply Base Management (SSBM) program

Employees

Our people make ABB successful. They bring new ideas to life, develop innovative solutions and deliver them with excellence to our customers. To ensure that we are an attractive employer, we listen to our people and engage in an open dialogue to identify and resolve potential issues. We want to continue to create a purpose-driven culture in which everyone can realize their potential.

How we engage:

- Annual performance reviews
- Annual employee engagement survey
- Learning and development opportunities
- Global network of employee resource groups (ERGs) promoting diversity and inclusion in the workplace
- Collective bargaining associations
- Dialogue with the ABB Employees Council Europe, the representative body of all ABB employees in Europe
- Sustainability Changemaker Award, which is open to all employees and recognizes and rewards innovations that drive sustainable progress across our value chain

CASE STUDY

Greener in Motion

13 CLIMATE ACTION

In 2022, ABB Motion created the Greener in Motion program to engage colleagues in pushing harder for sustainable alternatives, both inside and outside our organization. The program foresees a four hour face-to-face workshop, leveraging Climate Fresk , which has successfully enabled climate education worldwide since 2018.

The workshop begins with a “collaborative, serious game” in which participants use cards to create an image that summarizes the causes and consequences of climate change, based on the work of the Intergovernmental Panel on Climate Change. This helps participants develop a better understanding of why sustainability is such an urgent issue.

Next, the workshop guides participants through ABB’s position on sustainability and what we are doing internally and externally to tackle the issue. Participants are provided

with a clear understanding of ABB´s 2030 sustainability strategy and the details of its four main pillars. The third and last part of the Greener in Motion workshop helps deepen participants' awareness of how they can contribute to sustainability in their roles at ABB. Attendees brainstorm about the risks and opportunities associated with their potential capacity to help protect the climate.

Although primarily envisaged for salespeople, the Greener in Motion workshop can be easily adapted for other business areas, functions and customers. Making full use of the flexibility provided to them by ABB's decentralized operating model, ABB Motion's local organizations have begun revising the workshop contents to meet their local sustainability needs, and functions such as Procurement, IS and Communications are planning to leverage the workshop to raise awareness and develop their future sustainability actions. Since the program's launch in 13 countries since September 2022, 22 facilitators have been trained to facilitate the workshop, and 850 ABB colleagues joined the workshops. In 2023, the program will be open to all ABB countries, and we plan to run additional sessions in each region to train new Greener in Motion facilitators.

Governments and civil society

We engage with governments and civil-society organizations around the world on a wide variety of policies and regulations. We share information with policymakers on how our products and technologies contribute to a low-carbon society, and we seek to advance the global dialogue on climate change and sustainability. For example, we advocate for greater investment in electrical distribution grids as a necessary step to decarbonizing the energy system, transport, industrial operations and the built environment.

How we engage:

- Meetings with regulators to understand their priorities
- Engagement with government agencies and other stakeholders to demonstrate the value of our products
- Participation in international initiatives to address global issues such as climate change

Community

We care about the local communities in which we operate and want to have a positive impact on our surroundings. Our community engagement includes consultations and discussions with representatives of local community organizations. This engagement may intensify during the course of certain business activities, such as planning the

construction of a new site, and may also involve contributing to community projects and charities via donations and volunteering.

How we engage:

- Strategic corporate partnerships
- Donations and volunteering
- Direct dialogue with community representatives
- ABB Jürgen Dormann Foundation for Engineering Education
- ABB Research Award in Honor of Hubertus von Grünberg

External partnerships

With our technological expertise and capabilities in electrification and automation, we collaborate with many different institutions, companies and NGOs. Through these partnerships, we seek to drive the transformation of society and industry and to enable a more sustainable and resource-efficient future.

How we engage:

- Technology and innovation partnerships with other companies
- Technology partnerships with relevant start-ups
- Collaborations with research and educational institutions
- UN Global Compact
- World Business Council for Sustainable Development
- International Committee of the Red Cross

Over the past year, we interacted regularly with our stakeholders, holding sustainability-specific meetings with our investors, customers and suppliers. Beyond business-as-usual discussions, we engage with stakeholders for specific strategic and reporting purposes. We are especially interested in understanding how they perceive value and what matters most to them regarding economic, environmental and social issues. These insights shape our strategic decision-making and how we manage risks and opportunities. They influence the actions we take and how we communicate them to enhance transparency and accountability. This dialogue helps us identify and anticipate emerging trends, shifting customer needs and changing market expectations.

Material topics

ABB conducted a comprehensive stakeholder engagement process in 2020 to identify material sustainability topics. More than 300 stakeholders were interviewed to understand which sustainability topics mattered most to them. Please refer to the preceding section "Stakeholder engagement" to find a list of selected stakeholders and how we engage with them. Based on our stakeholder engagement process, the following topics were identified as material:

- Business resilience
- Carbon reduction
- Circular economy
- Data privacy
- Diversity & inclusion
- Employee well-being
- Ethics
- Health & safety
- Human rights and labor
- Operations - environment
- Products, solutions & services
- Responsible sourcing
- Socioeconomic impacts
- Stakeholder engagement

This list of material topics served as a basis for developing our 2030 sustainability strategy and related targets. In 2023, we will refresh ABB's materiality assessment to ensure it accurately reflects the current perspectives of ABB's internal and external stakeholders. In preparation for this materiality reassessment, we have reviewed our material topics to understand potential gaps and emerging sustainability issues. Based on our engagement with internal and external stakeholders, we will update our list of material topics in line with the requirements of relevant sustainability reporting standards and applicable regulations. Details on these activities will be provided in ABB's 2023 reporting.

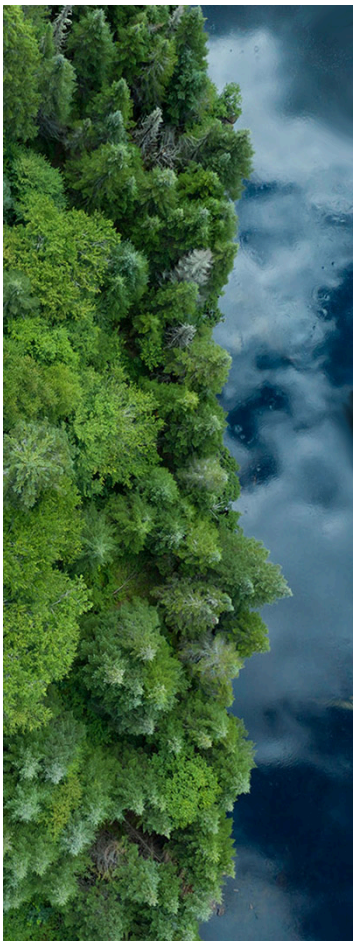
02
Low-carbon society

PILLAR OVERVIEW

We enable a low-carbon society

To support the transition to a low-carbon society, we aim to move toward carbon neutrality in our own operations by 2030 and are actively helping to reduce greenhouse gas (GHG) emissions in our suppliers' and customers' operations. Our technologies serve industry, buildings, power and transport – sectors that together account for three-quarters of global energy consumption.

To increase our accountability, in 2022 we developed 2025 mid-term targets to reduce emissions in our own operations and our suppliers' emissions. These mid-term targets were developed in close collaboration with our businesses and approved by the ABB Executive Committee and the ABB Board of Directors. Going forward, the Board of Directors will continuously evaluate the ambition of and progress toward our sustainability targets. We aim to achieve our targets ahead of schedule and will continue to refine them if we believe further adjustments will enable us to intensify our efforts.



We will continuously provide our stakeholders with transparent information about our performance and progress against our targets.

Targets 2030[1]	Mid-term targets 2025	2019 baseline[2]	2022 status
Achieve carbon neutrality in our own operations by 2030; reduce own scope 1 and 2 emissions by at least 80%[3]	Reduce own scope 1 and 2 emissions by at least 70%	639 kilotons CO_2e (adjusted for portfolio changes)	65% since baseline and 43% in 2022 alone
Work with main tier-one suppliers[4] to reduce their scope 1 and 2 CO_2e emissions by 50%	Work with main tier-one suppliers[4] to reduce their scope 1 and 2 CO_2e emissions by 20%	Measurement in process	Measurement in process

1 As we intend to have our targets validated against the Science Based Targets initiative's new Net-Zero Standard, we are no longer focusing on a limited amount of cases linked to the 100 megatons emissions' avoidance but rather on our complete portfolio of offerings.

2 Where a baseline applies.

3 Carbon offsets for remaining 20% CO_2e emissions as a last resort.

4 Suppliers covering 70% of our annual procurement spend.

ABB's 2030 GHG emissions targets for our own operations have been approved by the Science Based Targets Initiative (SBTi), providing external confirmation that they are in line with the 1.5 degrees Celsius target adopted by the Paris Agreement. Our sustainability reporting follows the GRI Standards, and our emissions accounting conforms to the globally accepted GHG Protocol.

In 2023, we will continue to reduce GHG emissions from our own operations by making greater use of certified green energy sources and self-generated solar electricity. We are continually improving the energy performance of ABB sites that possess significant footprints by means of energy management systems and energy efficiency measures; to this end, we use ABB's products and solutions whenever possible. In 2023, we will also focus on eliminating hard-to-abate emissions from natural gas by implementing energy efficiency measures and shifting to renewable fuels or electricity. Additionally, we will continue to cut our SF_6 emissions and coolant-related emissions from HVAC systems, and we will continue to transition to a fully electric vehicle fleet.

Emissions in own operations

Target 2030: Reduce emissions by at least 80 percent and achieve carbon neutrality in our own operations

As part of our drive to make ABB carbon-neutral, we have committed to three initiatives of the Climate Group of global companies. By 2030, we will completely electrify our vehicle fleet (EV100 initiative), source 100 percent of our electricity from renewable energy sources (RE100 initiative), and improve energy efficiency and productivity across our operations (EP100 initiative). These actions will help us to reduce our scope 1 and 2 GHG emissions by at least 80 percent by 2030. We are exploring additional solutions to eliminate the remaining 20 percent, with carbon offsets serving as a last resort.

In 2022, we made considerable progress toward our 2030 goal of carbon neutrality. We reduced our total energy consumption by 15 percent compared to a 2019 baseline. At the end of 2022, 52 percent of our energy was sourced from renewables. Since 2019, we have reduced our GHG emissions by 65 percent. A number of measures we have taken have made these results possible. We have increased the share of certified green and self-generated solar electricity we use from 24 percent to 81 percent. At the same time, we continually improve the energy efficiency of ABB sites by conducting energy audits, implementing energy management and monitoring systems, and making changes to buildings and production processes. Additionally, we remain focused on cutting our SF_6 emissions, which we have reduced by 79 percent since 2019.

2022 climate action initiatives

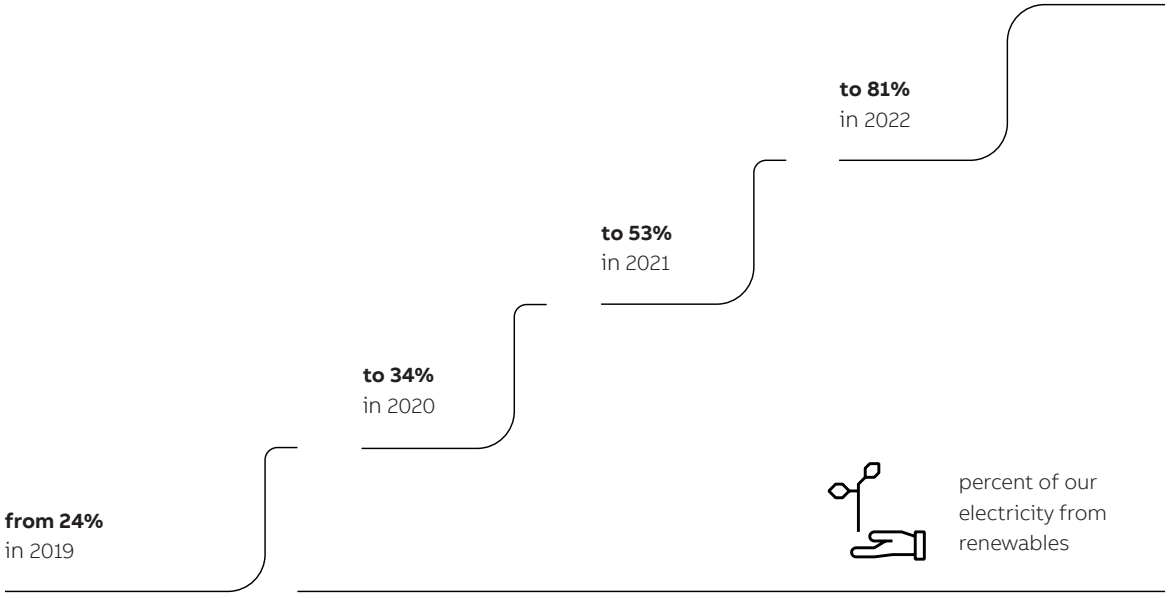
In 2022, we undertook a wide range of actions to reduce ABB's energy use and emissions.

In keeping with our EP100 commitments, we implemented more than 90 energy-efficiency projects across the company. These projects varied widely, from measures such as installing automatic lights and HVAC temperature controls at our factory in Cheonan, South Korea, to larger projects such as implementing a heat recovery system at our Large Motors and Generators factory in Helsinki. Our energy/distribution components factory in Ede in the Netherlands has saved 215,600 kWh of power per year using smart building management and LED lighting. From next year, the Ede site will reuse the heat generated in the production process, offsetting further carbon emissions.

In addition to these types of initiatives, which are undertaken at the site, division or business area level, the ABB Real Estate function runs a Group-level energy savings program. As of 2022, this program had achieved savings totaling 92.5 GWh per year and $11.6 million between 2018 and 2022. The savings were derived from 336 completed and ongoing energy-saving projects at ABB sites around the world.

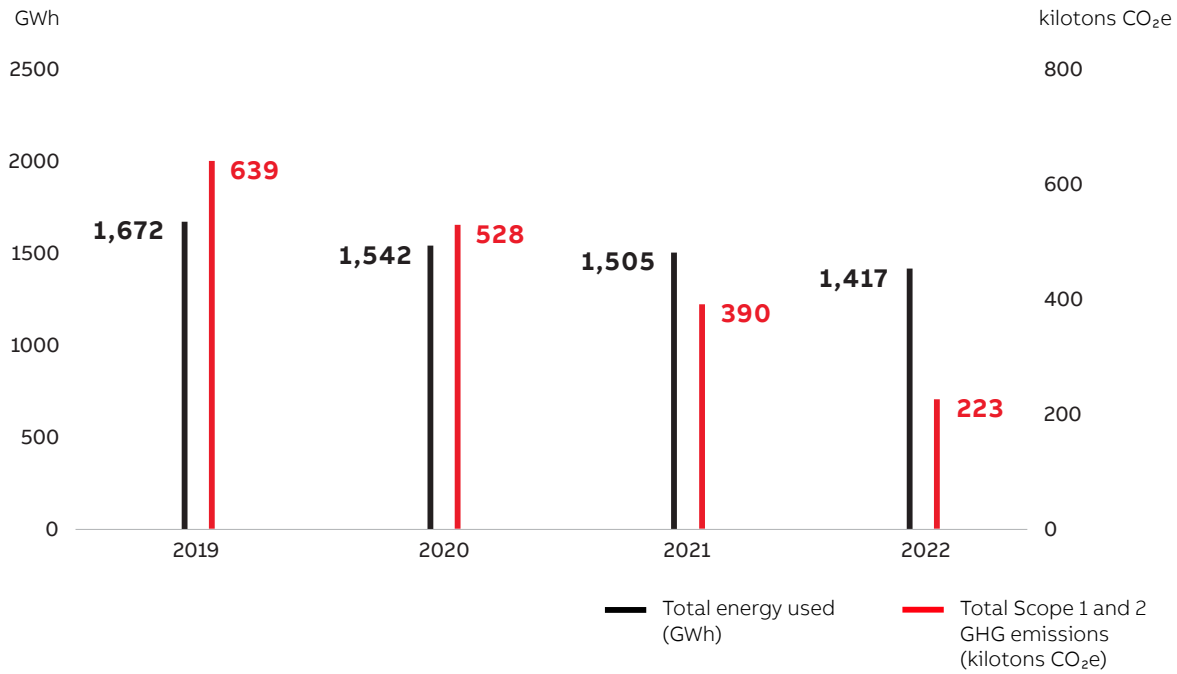
In alignment with our RE100 commitments, we continued to source renewable energy for our sites and/or equip them with on-site renewable power generation capabilities. In the past year, we installed on-site solar power at the ABB campus in Aleksandrów Łódzki, Poland, our technology campus in Jüri, Estonia, and the ABB factory in Cheonan, South Korea, among others.

Share of renewable electricity



Figures are adjusted for portfolio changes.

Total energy used and total scope 1 and 2 GHG emissions



Figures are adjusted for portfolio changes.

Our e-mobility research center in Delft in the Netherlands is already carbon neutral and generates 75,000 kWh of power from solar panels and geothermal sources. The site also feeds excess power into the local grid. Thanks to its use of renewable energy, the facility avoided 27,825 kg of GHG emissions over a 12-month period. And at our new innovation and training campus that opened at B&R's Eggelsberg headquarters in Austria, we installed one of the largest self-consumption photovoltaic systems in the country. Elsewhere, we have continued to contract with renewable energy suppliers to serve our facilities, most notably in the United States, where a large number of sites were shifted to 100 percent green energy in 2022.

In addition, we remained on track to electrify ABB's fleet of more than 10,000 vehicles by 2030, as per our EV100 commitments. In 2022, 50 percent of our global new vehicle orders were for either EVs or plug-in hybrid vehicles (PHEVs). Among other actions, in Spain and Portugal, ABB Motion chose to accelerate the transition of its fleet to EVs by 2024 (while retaining some hybrids for service uses). It intends to achieve a 90 percent conversion rate by the end of 2023. Lastly, ABB's E-mobility division has committed to converting its entire fleet to battery-electric vehicles (BEVs) by 2026.

By 2030, our goal is to achieve carbon-neutral operations. By demonstrating our leadership in the field of operational decarbonization, we want to inspire our customers and show them that the energy transition can be achieved now by deploying existing energy-transparency, efficiency, electrification and resiliency solutions that serve communities.

CASE STUDY

Leading the way toward carbon-neutral operations

As one of the largest companies operating in Estonia, we feel a particular responsibility to lead the way in more sustainable production techniques. In 2022, ABB Large Motors and Generators opened a solar park at the center of its Jüri, Estonia, technology campus to help show how we can sustainably achieve carbon-neutral operations. Expected to cut the plant's GHG emissions by an estimated 180 tons per year, the facility will also reduce its dependency on the external grid and protect it from energy price fluctuations.

To help ABB meet its commitment to achieving carbon-neutral operations by 2030, the solar park's six stations and 820 panels generate 360 kW of electricity, supplying nearly 6 percent of the factory's electric needs. The work done on the campus manufacturing components for our most efficient motors and generators also plays a role in innovating for a more energy-efficient, regenerative, adaptive world. Moreover, the campus is also helping ABB meet its RE100 commitment to purchase 100 percent renewable electricity for the operation of its factories.

In addition to helping protect the environment, cut emissions and reduce our natural resource consumption, the new solar park in Jüri simply makes good business sense. Amid increasing energy prices, we expect to cover the investment in the solar park within the next 4 to 5 years, rather than the 10 years originally envisaged.

Emissions of sulfur hexafluoride

In addition to the projects described above, we have implemented a global program to reduce our direct emissions of SF_6 from losses associated with either handling or production processes. Over the past year, the program reduced ABB's direct emissions of SF_6 by 61 percent. In 2022, we emitted 861 kg of SF_6, down from 2.21 metric tons in 2021.

Supplier emissions

Target 2030: Work with our most impactful suppliers – which account for 70 percent of our supply spending – to achieve a 50 percent reduction in their emissions

In 2022, ABB announced a new emissions target for its supply chain. The company will work with its main tier-one suppliers with the aim of helping them achieve a 50 percent reduction in their scope 1 and 2 GHG emissions by 2030. The program is focused on our most impactful tier-one material and service suppliers, accounting for 70 percent of ABB's annual procurement spending. The new target has implications for our business, as it requires us to scrutinize the sustainability of our suppliers with greater care. At the same time, the project will contribute significantly to ABB's goal of enabling a low-carbon society because many of our suppliers have larger emissions footprints than ABB itself.

In 2022, ABB's four business areas began to engage with suppliers on the subject of emissions. For example, in India, ABB conducted its first Sustainable Supplier Summit. Held at ABB's award-winning Nelamangala facility in cooperation with the Confederation of Indian Industry, the summit focused on approaches to mitigating climate change and showcased the best practices being applied at the ABB plant. In addition to engaging with suppliers, ABB's business areas continued to form dedicated teams, formalize supplier sustainability frameworks and designate full-time supply chain sustainability managers. ABB also continued to strengthen its internal capacity to conduct life cycle assessments (LCAs). LCAs have proven themselves as effective tools for prioritizing interventions with suppliers, as they quantify the contributions of raw material sourcing to the full emissions footprints of our products.

Overall, we have reduced emissions in our supply chain by incorporating more recycled materials into our products, shifting to lower-carbon primary materials and using lower-carbon transport between tiers of suppliers.

For more information about ABB's comprehensive approach to supplier engagement, please refer to the chapter "Responsible sourcing."

Customer emissions

Our leading electrification and automation technologies help our customers reduce and avoid GHG emissions

Our greatest contribution to a low-carbon society comes from our energy-saving and emissions-reducing technologies. Among our many impactful offerings are energy-efficient motors and drives, which are in use across industry, buildings and infrastructure, and electric vehicle (EV) charging systems, which enable the shift from combustion cars to EVs. Further contributions are made by our automation technologies, which increase the energy efficiency of industrial operations and facilitate the reliable integration of renewable energy sources into the energy mix, among other purposes. Digital solutions from ABB help customers design and deploy such integrated, energy-efficient systems in a cost-effective manner. In this section, we highlight some of the ways in which we are helping our customers reduce and avoid emissions in sectors that account for the majority of global energy consumption.

Energy savings enabled by ABB motors and drives

Significant energy savings are enabled by our variable-speed drives for electric motors. They regulate the amount of power that is fed into a motor to match the load it must perform, thus avoiding excess use of energy. By adding a drive to an existing motor system (retrofit), energy savings of up to 25 percent are possible. Upgrading a drive to a newer model can deliver single-digit percentage energy savings, while replacing a motor and drive system with a newer model typically enables energy savings of around 1 percent.

To calculate the energy savings that ABB motors and drives enable for our customers, we considered the most impactful applications for these offerings and compared them with a typical or “base” scenario that represents the energy that would be consumed in the absence of the ABB offering. The most impactful applications are pumps, fans and compressors, which account for 45 and 80 percent respectively of all ABB low- and medium- voltage drives sold. As a rule, the larger the motor, the more energy the drives save.

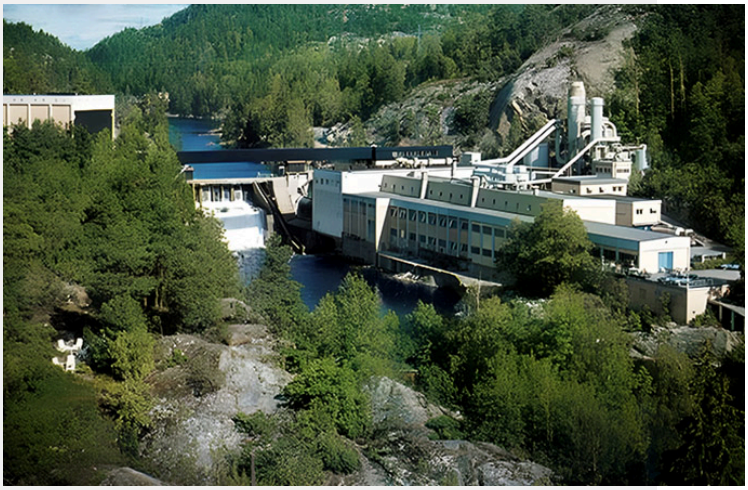
Technologies for industry

Industry consumes more energy than any other sector and emits 24 percent of global GHG emissions[1]. The bulk of electricity used in industry is consumed by industrial electric powertrains, which typically consist of a motor, a variable-speed drive and an application, such as a pump, fan or compressor.

In Brazil, ABB drives, motors and smart sensors enabled water and wastewater company Saneago to reduce its electricity consumption by roughly 25 percent in 2022. Our process automation and control systems continue to deliver energy savings for customers in industries that address a wide range of essential needs – from supplying power, water and other basics to manufacturing goods and transporting them to market. The intelligent power solution we supplied to the Kangsheng Data Center in Beijing will support its goal of becoming a "low-carbon and green data center," putting it on track to save up to 20 percent in utility costs and 30 percent in operational costs.

CASE STUDY

Eliminating 14,000 tons of annual GHG emissions at a pulp plant in Norway



Drying wood pulp is an energy-intensive process. At its factory in Kragerø, Norway, Vafos produces 80,000 tons of pulp a year to be processed into cardboard. Until now, the plant has been burning oil to generate the necessary heat. But Norway is committed to reducing carbon emissions and already has one of the cleanest power grids in the world, relying almost exclusively on renewable resources.

In 2022, Vafos replaced elements of the plant's heating system with an electric one equipped with 10 of ABB's DCT880 power controllers. These controllers will ensure that the system is as efficient as possible, reducing peak loads and managing each heating element to minimize total power consumption without reducing output.

1 IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability; Working Group II Contribution to the Sixth Assessment Report, p. 88 of pdf

The new system has the potential to impact carbon emissions equivalent to taking 7,000 conventional automobiles off the road. The project demonstrates how industry can support Norway's goal of cutting carbon emissions in half by 2030. The new power controllers allow for more precise control of the drying process, and the system eliminates the need to store large quantities of fuel oil on site. The DCT880 units incorporate a power optimization feature that keeps load requirements stable, thereby limiting the plant's potential impact on the local power grid.

The solution represents one of the ways ABB Motion is helping customers save energy and enabling the low-carbon future with digitally enabled drives, motors and services.

In 2022, we provided our industrial customers with a range of digital solutions that help them monitor and optimize their energy consumption and emissions footprints. Fiorentini, a major Italian snack manufacturer, is using ABB Ability™ Energy Manager to monitor almost 100 intelligent devices and control the electrical power distribution in its new 56,000-square-meter production facility in Trofarello. This solution will help Fiorentini make better-informed performance and energy consumption decisions, in keeping with its commitment to reduce its use of electricity by 400,000 kWh per year. Digital solutions such as the ABB Ability Digital Powertrain are also being used by CERN, Europe's foremost nuclear research center, as part of a project intended to improve the energy efficiency of its cooling and ventilation infrastructure by up to 15 percent.

Looking ahead, we have expanded our partnership with Hydrogen Optimized to advance the deployment of economical, large-scale, green hydrogen production systems. We expect such systems to play a vital role in the decarbonization of essential but hard-to-abate industries such as utilities, metals, cement, ammonia and fertilizers, as well as to provide clean fuels for aircraft, ships, trucks and railway engines.

CASE STUDY

Accelerating industrial decarbonization and CO_2 removals

ABB's automation, electrical and digital solutions are playing a key role in the creation of the world's first open-source CO_2 transport and storage infrastructure, Norway's Northern Lights project.

Part of a growing movement to actively manage the carbon cycle and get it back in balance, Northern Lights is a joint venture between Equinor, Shell and TotalEnergies. Designed for safe and permanent carbon capture and storage, the project was set up to help industrial emitters prevent carbon from ever reaching the atmosphere. Its first phase, expected to be completed by mid-2024, will have the capacity to permanently store up to 1.5 million tons of CO_2 per year. The project's second development phase will work to expand that to more than five million tons stored per year.

Purpose-built ships using ABB shaft generator systems with permanent magnet technology will transport captured and liquefied CO_2 from emitters to the Northern Lights Øygarden Terminal in western Norway. This process will be remotely operated from a central control room at Equinor's facilities in Sture, seven kilometers away. To enable the remote operations, ABB will build a state-of-the-art Extended Operator Workstation at the terminal that will communicate with the control room to minimize response times and support 24/7 operations. ABB Ability™ System 800xA will be the distributed control system for the terminal, analyzing real-time and historical data and instantly providing plant metrics and KPIs. This solution will enable operators to make more accurate and informed decisions and review options for optimizing performance of assets and processes.

Technologies for the buildings sector

Buildings account for 5.6 percent of global GHG emissions.[2] ABB is supporting the effort to reduce the emissions of this sector with technologies that can increase the energy efficiency of existing structures and radically reduce the emissions footprint of new structures that are purposely designed to conserve energy.

In 2022, ABB and Caverion, a northern and central European-based company specializing in smart and sustainable built environments, entered an agreement to accelerate the development of carbon-neutral buildings by combining the two companies' solutions, integration capabilities and expertise. This collaboration is directly linked to ABB's Mission to Zero™ program, which seeks to help customers achieve carbon neutrality by leveraging energy management solutions associated with electrification, distributed energy and renewable energy. Also in 2022, ABB Electrification and Samsung Electronics forged a global partnership to supply jointly developed technologies for energy savings, energy management and the Internet of Things (IoT) for use in residential and commercial buildings.

CASE STUDY

BREEAM green building certification: designing more sustainable buildings

BREEAM (Building Research Establishment Environmental Assessment Method) is considered the world's leading method for assessing sustainability in the construction sector. In Europe alone, the European Commission estimates that around 75 percent of building stock, representing some 220 million buildings, is energy-inefficient. Since it has been estimated by the World Economic Forum that buildings use 40 percent of the energy that humans consume, BREEAM represents an important way to assess and promote society's efforts to achieve greater sustainability.

2 IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability; Working Group II Contribution to the Sixth Assessment Report, p. 88 of pdf

In 2022, independent consulting agency Encon assessed several of ABB Electrification's efficiency solutions and found that they contributed measurably to developers' efforts to earn higher BREEAM certifications than could be achieved with conventional building systems. Encon is qualified in sustainability assessment methodologies, including BREEAM.

The solutions assessed under the BREEAM standard include ABB Ability Energy Manager and ABB Smart Buildings solutions. ABB Ability Energy Manager is a digital solution that provides a clear and comprehensive way to monitor and optimize a building's energy consumption and carbon footprint. ABB Smart Buildings solutions include a complete portfolio of automated and intelligent controls for lighting, air conditioning, heating and motion detection.

Under the BREEAM standard, it was determined that ABB Ability Energy Manager can help a new building earn up to 42 credits in 10 different sustainability categories addressed by the standard. ABB Smart Buildings solutions can make it possible to earn up to 21 credits across seven categories. As an internationally recognized emblem of quality, BREEAM certification serves as a helpful guide for businesses seeking to reduce the environmental impacts associated with refurbishing existing buildings or erecting new ones.

Technologies for the power sector

The power sector is responsible for 23 percent of global GHG emissions.[3] To help reduce its emissions, ABB has developed solutions that not only support the transition to renewable energy, but also maximize the efficiency and reliability of power facilities through the automation, integration and optimization of the entire plant.

One of the most significant GHGs associated with the power sector is sulfur hexafluoride (SF_6), a commonly used insulating gas that is 23,500 times more potent than CO_2. ABB's ecoGIS™ range of products is enabling customers like Enel and UK Power Networks to reduce their emissions by phasing out switchgear that uses SF_6. To support customers' energy transition, ABB also supplies innovative solutions for the integration of renewable energy. For example, ABB Ability™ Electrification Monitoring and Control, ZEE600 software and ABB Ability™ Smart Substation Control and Protection for SSC600 electrical systems can handle the intermittency associated with renewable energy resources. That is why they were installed in 2022 at a substation near India's Anabaru windfarm. In Italy, Enel Green Power upgraded its 60 MW geothermal plant in Farinello – part of the oldest geothermal complex in the world – with ABB's state-of-the-art medium-voltage VD4G generator circuit breakers, reducing outages. These circuit breakers provide full protection for this major source of renewable energy relied upon by the residents of Tuscany. In India, we supported the efforts of THINK Gas, which is working to shift India's energy sector from coal, oil and firewood to gas; we supplied the company with our

3 IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability; Working Group II Contribution to the Sixth Assessment Report, p. 88 of pdf

SCADAvantage™ and ABB Ability™ Genix Industrial Analytics and AI suite to increase the efficiency, availability and reliability of its city gas distribution network.

Technologies for the transport sector

Transport accounts for 15 percent of global GHG emissions.[4] To help decarbonize this vital sector, ABB is supporting the transition to electric mobility. In addition to providing charging solutions for vehicles such as passenger cars and buses, we also offer solutions to electrify the powertrains of trains and marine vessels.

In 2022, we continued to support the adoption of EVs around the world, having now sold more than 840,000 electric vehicle chargers in more than 85 markets. Our work included signing a new global framework agreement with Shell to supply our full portfolio of charging solutions. As part of this agreement, we announced the launch of Germany's first nationwide charging network, using ABB Terra 360 chargers. The Terra 360, recognized by Time magazine as one of the best inventions of 2022, is not only one of the fastest electric car chargers in the world but also the most flexible one. It is capable of fully charging an electric car in 15 minutes and can charge up to four vehicles simultaneously, making it ideal for fleet operators. We also partnered with PACCAR, a designer and manufacturer of premium trucks, to provide advanced charging solutions for its fleet operations in North America and Europe. And in line with our commitment to facilitate progress in this sector, we worked with CharIN and other organizations to promote the adoption of heavy-duty all-electric vehicles by jointly developing a standard for the Megawatt Charging System, which is expected to debut in 2024.

In the rail sector, we are supplying a 25 kV power solution for Lithuanian Railways that will be used to electrify 730 kilometers of a fully carbon-neutral rail line. And in Australia, we are providing the Adelaide Metro with a lithium-ion-based energy storage system that will make better use of energy from regenerative braking systems; the solution is expected to reduce electricity consumption by up to 16 percent.

In the marine transportation segment, we have continued to drive the decarbonization of ships with our electric, digital and automation solutions. Among our many projects in this sector, we will supply and integrate advanced power, automation, control and energy-storage systems for two next-generation installation vessels ordered by Eneti, a company specializing in offshore wind turbine construction. In the port of Toulon, we are leading a turnkey project to build the largest ship-to-shore solution in France, which will cut emissions and noise pollution for ferries and cruise ships during port stays.

4 IPCC Climate Change 2022: Impacts, Adaptation and Vulnerability; Working Group II Contribution to the Sixth Assessment Report, p. 88 of pdf

CASE STUDY

Robots that assemble battery packs for heavy electric vehicles

Scania AB, the Swedish truck and bus manufacturer, is one of ABB's longest-standing clients. The companies have worked together for more than four decades. Today, Scania is seeking to maintain its place at the cutting edge of its sector by investing heavily in the production of electric vehicles. As part of that push, it is investing more than $100 million in an advanced new factory for battery assembly adjacent to its main assembly site in Södertälje, Sweden. ABB has signed on to provide a range of industrial robots for use in the state-of-the-art, 18,000-square-meter facility.

The automotive industry has always been an early adopter of robotics and other automated production technologies. But with the shift to electric vehicles, it is making some major changes in its manufacturing processes. ABB is helping Scania adapt to these changes by supplying robotics solutions, some of which are being deployed in completely new ways. For instance, this is the first time the IRB 390 robot will be used in a battery production facility. Originally designed for packing applications, the units will be used by Scania to mount contact plates in batteries. They can execute the task at the rate of one plate per second, operating 24 hours a day.

Other ABB robots involved in the assembly process will include the IRB 4600 and IRB 6700. ABB will also provide a variety of solutions to support the plant's operations. Among these is ABB's RobotStudio® simulation and programming software, which makes it possible to test and debug the production line prior to final deployment. The software serves to shorten lead times and improve process quality.

The facility will assemble its modules from battery cells supplied by Northvolt. The Northvolt facility in Sweden, the largest of its kind in Europe, was also developed in partnership with ABB. Once the packs are completed, they will be transferred directly to Scania's vehicle assembly hall next door. The battery assembly factory will play a major part in keeping Scania at the forefront of industrial digitalization and automation, while enabling the shift to electric vehicles. The plant is expected to be fully operational in 2023.

03
Preserving resources

PILLAR OVERVIEW

We preserve resources

By 2030, we are committed to covering at least 80 percent of our products and solutions with our circularity approach and evaluating them according to a set of KPIs that correspond to each product's life-cycle stage.

Within that same timeframe, we will completely eliminate any waste from our own operations that would be sent to landfill or to incineration without energy recovery, wherever doing so is compatible with local conditions and laws. Today, 48 percent of ABB's sites around the world are already sending zero waste to landfill.

We will also extend our circularity approach to our suppliers. In addition to ensuring that at least 80 percent of our supply spending is done in focus countries that are covered by our Sustainable Supply Base Management (SSBM) program, we are taking steps to make certain that the materials we source from third parties form part of our circularity approach. For further information on objectives related to our supply chain, please refer to the chapter "Responsible sourcing."

Outside of the scope of our stated 2030 sustainability targets for preserving resources, we have continued to drive progress toward a number of related objectives. We regularly seek to identify our use of restricted or hazardous substances, which we aim to reduce and, where possible, eliminate from our operations. We also run a longstanding program aimed at reducing water risk, water use and water withdrawals in water-stressed areas; we take pride in the water-saving measures we have implemented at ABB sites around the world.

Since introducing our 2030 sustainability targets for preserving resources, we have made continuous progress:

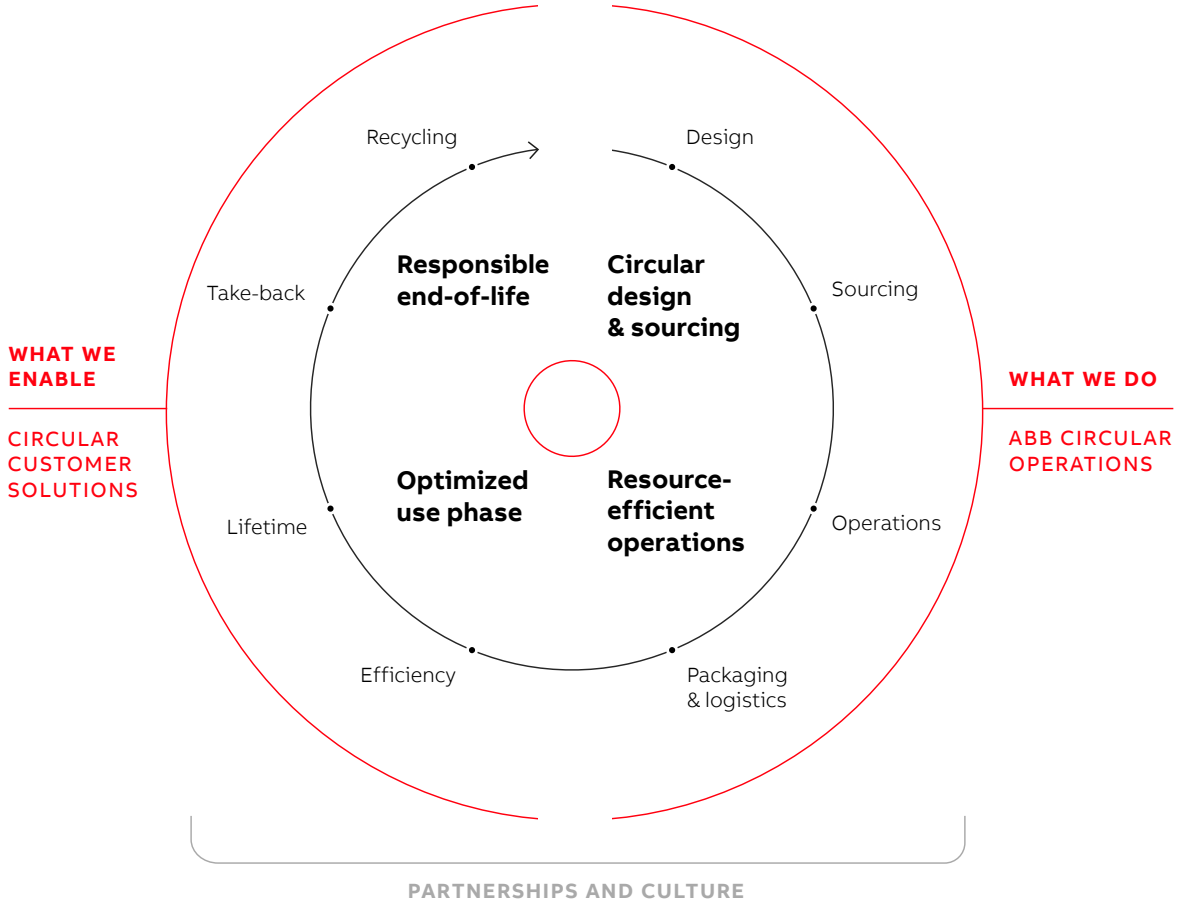
Targets 2030	2019 baseline[1]	2022 status
Cover at least 80% of ABB's portfolio of products and solutions with circularity approach	n/a	We aim to refine our circularity approach to achieve clear alignment with regulations in 2023
Send zero waste to landfill while taking measures to prevent waste generation[2]	17.1 kilotons, equivalent to 8.8% of total waste (adjusted for portfolio changes)	11.6 kilotons (equivalent to 6.7% of total waste)

1 Where a baseline applies.
2 Where compatible with local conditions.

Circularity

Target 2030: At least 80 percent of ABB products and solutions will be covered by our circularity approach

At ABB, we work with our value chain partners to drive sustainable development. To reduce the environmental impact of ABB's operations, products and solutions, as well as to preserve the earth's resources for future generations, we want to enable our customers and suppliers to become more circular and drive circularity across our value chain.



To develop and coordinate our circularity initiatives, ABB has established a cross-business area circularity working group. The goal of this working group is to develop a robust, objective, quantifiable and auditable framework that captures the circularity of our product portfolio. We recognize the need to incorporate external standards into this process and are therefore working to align our framework with existing external

reporting standards and related regulations. These include the EU taxonomy for sustainable activities, the Corporate Sustainability Reporting Directive (CSRD) and GRI Standards, among others. By conducting a gap analysis and reinforcing governance, we aim to finalize our approach to regulatory alignment in 2023.

ABB's circularity KPIs address all phases of the product life cycle. They were developed so we could set ambitious targets and move forward in a coordinated manner, while taking into account the wide range of solutions offered by our divisions and the diverse needs of the customers we serve.

All of ABB's four business areas strengthened their circularity implementation plans over the past year. ABB Electrification introduced circularity KPIs into performance management processes and mandated all divisions to develop circularity plans and commit to quantitative targets through 2025. ABB Motion assigned circularity target leads for each division and launched seven cross-division circularity initiatives. ABB Process Automation designated circularity leads and teams for each division and formalized its top circularity priorities. These included sourcing alternatives to plastics, conducting further life cycle assessments (LCAs), and providing a broad range of services to extend the useful lives of systems and technologies already installed at our customers' sites. ABB Robotics & Discrete Automation started to conduct LCAs for all of its top-selling robots, as well as for every new product it develops.

In 2022, we also created the ABB Circularity Approach Guidelines. These guidelines clarify the purpose of our circularity approach, define KPIs, and establish principles for the assessment of ABB products and solutions.

To support our customers' circularity journeys and highlight the circularity performance of ABB products, in June 2022, we launched the EcoSolutions™ label. To be marketed under this product category label, products must provide transparency into their environmental impacts, both through a third-party verified environmental product declaration (EPD) and a circularity KPI assessment under the ABB framework.

Looking ahead, we are continuing to work with our customers and partners on the development of innovative business models that would enable our entire value chain to become increasingly circular. Such models are critical if society is to transition from a linear "take-make-waste" economy to a circular "borrow-use-return" economy.

CASE STUDY

Upcycling recovered marine plastic while showcasing the future of retail

For the month of April 2022, an ABB IRB 6700 robot upcycled plastic recovered from the ocean to 3D-print designer vases, chairs, lampshades and other homewares in a front window at Selfridges, the chic department store in London. This showcase for circular approaches to production received considerable attention on Oxford Street, in one of Europe's busiest shopping areas.

The robot and ABB's simulation software, RobotStudio®, used Parley Ocean Plastic® – intercepted marine plastic debris – to print personalized designer objects. The objects were selected by customers on a screen and made to order on the premises. Parley for the Oceans, an environmental organization and global network that collected the plastic trash, developed the demonstration in partnership with innovative design brand Nagami. The goal was to encourage consumers to think about how the goods they buy are made and the impact of production processes on the environment.

Parley Ocean Plastic® was developed to help prevent the destruction of oceans by empowering communities across the globe to turn local plastic pollution into business opportunities and useful objects. By reusing plastic from the ocean to print designer objects, ABB highlighted the important contribution of robots to the sustainable manufacturing processes central to a circular economy. This initiative illustrates how ABB is working closely with partners, customers and suppliers to meet our commitment to cover 80 percent of our products and services with a circularity approach by 2030.

How ABB is going full circle

Product design and sourcing

In 2022, we began the process of reviewing and modifying product designs wherever practicable. For example, teams at ABB Motion are redesigning their motors so they can be more easily disassembled. The purpose of this is to reap the full benefits from the 98 percent recyclability rate of these products.

In terms of sourcing, we worked to identify fully renewable, recyclable or biodegradable resource inputs for our manufactured products. Our business areas are gradually raising the bar for supplier qualification and management processes by requiring suppliers to address the circularity of supplied materials and components. The teams also sought to identify viable alternatives to the conventional plastics and metals used in some products.

Production and packaging

In 2022, ABB continued to develop and implement circular solutions for its production processes and packaging materials. Many of the best ideas that were implemented over the course of the year were devised by local teams at our production facilities.

For example, the team at ABB's Portland, Tennessee (USA), factory came up with a way to repurpose scrap plastic from its injection molding processes. By grinding the scrap into pellets and using it as part of a 25 percent recycled/75 percent virgin mixture in production, the facility was able to cut the amount of waste it sends to landfill each month by more than nine metric tons.

Similarly, the team at ABB's St. Louis, Missouri (USA), plant identified a way to reuse scrap from the manufacture of motors, recovering 26,308 metric tons of electrical steel per year. When the plant's primary electrical steel supplier purchased a local recycling company, ABB's team realized they could sell the electrical steel scrap back to their supplier; in turn, the supplier pays ABB an above-standard price for the scrap because they can be certain that the material is of the highest quality.

ABB continued to replace conventional plastics in its packaging with either recycled or bio-based materials. ABB Electrification's Smart Power division, for example, ran a pilot project in 2022 to improve the environmental performance of its packaging and reduce transport emissions. The project adopted an eco-design approach, based on LCAs. Packaging was analyzed based on its geographical origin, transportation distances and the overall environmental impact of its materials, among other factors. Focused on the packaging of Ekip Up digital units, the project yielded strong results. The new packaging is completely plastic-free, uses FSC-certified cardboard and has led to reductions in total cost, environmental impact and weight of the packaged unit, while providing the same level of protection.

Another sustainable packaging pilot project was undertaken by the team at ABB's factory in Frosinone, Italy, in collaboration with ABB's Research Center in Switzerland. Together they developed 100 percent recycled PET plastic blister packs. These will replace the virgin plastic blister packs used for the factory's low-voltage breaker accessories in early 2023. And ABB Robotics & Discrete Automation developed new packaging for B&R's ACOPOS servo drive; the new packaging is 50 percent smaller and 30 percent lighter. Another small adjustment that yielded big results was their decision to ship B&R X20 series I/O and controls in the customized configurations requested by their customers, rather than shipping each component separately.

Use phase

We offer our customers a number of ways to extend the life of their equipment. Retrofits, for example, extend the service life of existing drives and allow customers to replace only the necessary components. By retaining the equipment's original cabinets, cabling, electrical components and automation systems, retrofits make it possible to modernize machinery with minimal expense, waste or interruption to normal operations. The life of the asset can be extended, while adding features and functionality that enhance safety, reliability and performance. As another example, we offer retrofit solutions that not only extend the service lives of marine vessels but also convert them to operate in hybrid and zero-emission modes.

ABB also has expertise in reconditioning aging assets to improve their reliability, performance and service life. In 2022, for example, ABB replaced the outdated ACS800 converters in 24 wind turbines operated by Enefit Green, the largest wind energy producer in the Baltics.

The decision to recondition old equipment is especially important in light of the quantity of GHG emissions involved and the materials required for the manufacture of new equipment. At the same time, reconditioning or rebuilding existing equipment is typically very cost-effective, for assets both large and small. In 2022, Sala Heby Energi Elnät AB, a Swedish electrical distribution company, had ABB refurbish 50 of its HPA circuit breakers, which had been manufactured in the 1980s. The customer was pleased to receive refurbished switches that will last another 20 to 25 years, for half the cost of replacement products.

ABB also offers digital solutions that enable our clients to extend the lives of their assets through optimization, remote operations and preventive maintenance. For example, Gallo NV, a leading Belgian recycling company, implemented ABB Ability Condition Monitoring for powertrains at its facility. By leveraging data insights and service expertise provided by ABB, Gallo has reported a significant increase in uptime and extended the service life of its machinery, with a payback period of just one year.

In addition, some of our divisions began to work with their customers to develop new business models that could drive circularity across the value chain. For example, in 2022,

ABB Motion in Sweden piloted recycling incentives, which are now being rolled out to other countries in Europe.

End of life

In 2022, ABB continued to apply circularity principles to the end-of-life phase of our product portfolio. For example, to further improve the recyclability of ABB's Azipod® electric propulsion systems, we made the materials used in their fabrication easier to reclaim and provided customers and recycling companies with clear end-of-life instructions. Up to 95 percent of the materials used in the production of the Azipod propulsion system is recyclable.

Additionally, ABB has entered partnerships with third-party companies to recycle batteries. One such partnership, between ABB Switzerland and Librec, a Swiss recycling company, assures that industrial batteries produced by ABB will be 90 percent recycled. As local legislation requires all battery manufacturers to either ensure end-of-life management or pay a disposal fee in advance, the partnership is good for the environment while reducing costs for ABB.

Over the last 25 years, ABB's remanufacturing teams have given thousands of used robots a second life by refurbishing or upgrading them. Peripheral equipment, such as controllers and manipulators, is also refurbished to "like-new" condition at ABB's Global Remanufacture & Workshop Repair Centers. Among these is the new robot refurbishment center that we opened in Mosnov (Czech Republic) in 2022. By offering this service, ABB makes it possible for existing customers to sell their redundant robots and equipment back to us rather than scrapping or mothballing them. A life cycle assessment carried out in 2021 revealed that robot refurbishment releases roughly 75 percent fewer GHG emissions than manufacturing a new robot. For robots and other equipment that can no longer be refurbished, ABB has a specialized team that disassembles and sorts the component materials for recycling.

CASE STUDY

Replacing raw materials in ABB products with lower-carbon alternatives

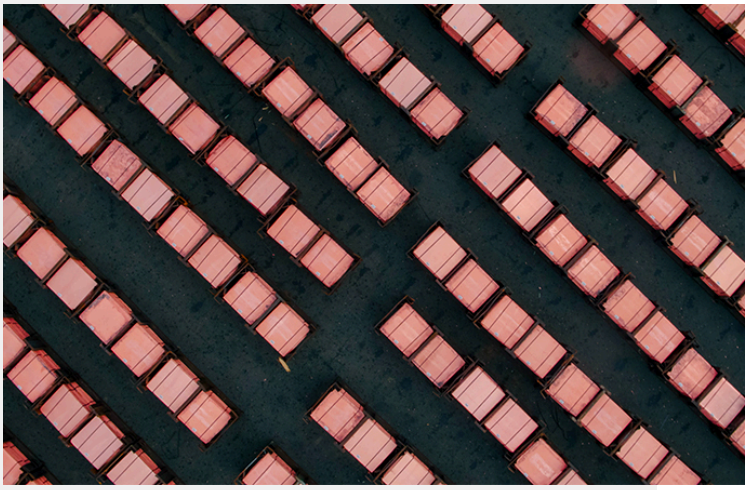


ABB is working with Boliden, the Swedish mining and smelting company, to source copper with a lower carbon footprint for use in ABB's electromagnetic stirring (EMS) equipment and high-efficiency electric motors.

The agreement with Boliden is part of our push to reduce the environmental impact of the raw materials used in our products by replacing them with lower-carbon alternatives. In addition to using recycled copper, we are committed to using more recycled electric steel (e-steel) and recycled aluminum. Recycling copper, aluminum and steel results in energy savings of between 75 and 95 percent, compared to virgin production.

Copper is a vital material for the use in industrial electrical equipment, but its production is energy-intensive. To address this, Boliden has developed low-carbon copper that is mined using fossil-free energy; it also produces copper using secondary raw materials from recycled products. The carbon footprint of these products is 65 percent lower than the industry average.

Hollow conductor wire made from Boliden's certified recycled copper will be used in ABB's EMS products for steel and aluminum manufacturing. Switching to recycled copper for just one stirrer will save 4,050 kilos of GHG emissions – equivalent to the amount generated by charging nearly half a million smartphones.

Furthermore, as of 2023, we will buy Boliden's low-carbon and recycled copper for use in our IE5 Ultra-Premium-Efficiency and e-mobility motors produced in Europe. We have also signed a memorandum of understanding to help Boliden identify inefficient low-voltage motors across its own operations. These motors can then be replaced with high-efficiency motors under ABB's take-back upcycling framework; the old motors will be recycled to provide raw materials for Boliden's recycled copper.

Waste

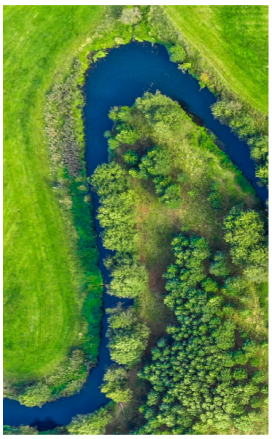
Target 2030: Zero waste from our own operations will be disposed of in landfills, wherever this is compatible with local conditions and regulations

For more than a decade, ABB has been launching intensive waste-reduction and recycling programs at its sites around the world. In addition to reducing ABB's impact on the environment, these programs deliver cost savings to our business areas.

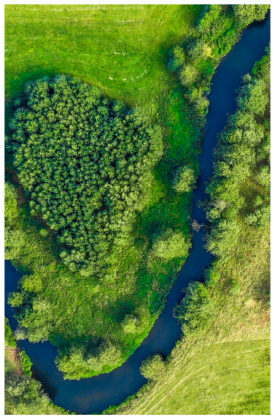
Globally, we now have 159 sites that send zero waste to landfill, while around 170 are making progress toward this goal. In the course of 2022, we reduced the amount of waste that ABB generates by 4.8 kilotons. Altogether, we implemented nearly 60 recycling and waste reduction projects in 2022. These projects reduced the waste we generate annually by an estimated 700 tons. Of these projects, 55 percent have an expected payback period of less than two years. In total, 86 percent of our waste in 2022 was recycled, and 6.7 percent was sent to landfill, down from 7 percent in 2021.

Non-hazardous waste to landfill

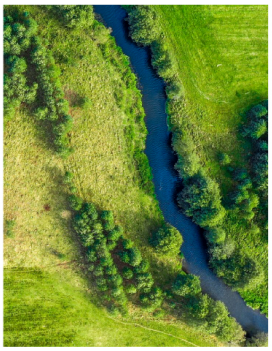
2019
8.8%
(17.1 kiloton)



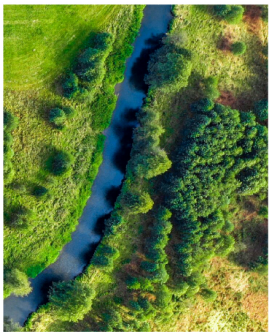
2020
8.4%
(14.6 kiloton)



2021
7%
(12.3 kiloton)



2022
6.7%
(11.6 kiloton)



Figures in the graph are adjusted for portfolio changes.

In late 2022, our Xiamen and Xinhui, China, facilities were the first ABB sites to be certified as “Gold” waste-to-landfill operations under the UL2799 and UL2799A standards from UL (Underwriters Laboratories), a third-party company that tests products and validates and certifies claims for manufacturers. Xinhui achieved 95 percent diversion and 1 percent thermal processing with energy recovery, while Xiamen earned a diversion rate of 99 percent and 5 percent of thermal processing with energy recovery.

CASE STUDY

Santa Palomba and Dalmine become ABB’s next zero-waste facilities

ABB Electrification’s Santa Palomba and Dalmine factories in Italy achieved zero production-waste-to-landfill in 2022, saving 1,190 metric tons of waste annually combined.

Both facilities are well ahead of ABB’s commitment to produce zero waste to landfill at all of its sites by 2030.

Santa Palomba, a factory that produces 15 million residual current devices per year, partnered with waste and environment specialist Ecosystem to implement new waste management processes. By mapping and analyzing data on waste generated according to production processes and life cycles, ecosystem technicians identified the best ways to recover waste. The factory’s 350 employees were also trained in new waste handling procedures, which was crucial to the project’s success, as it empowered colleagues to make waste separation decisions and engaged them fully in the initiative.

Dalmine, which manufactures medium-voltage circuit breakers and switchgear, deployed a sorting program for all waste generated by its production. The entire workforce is trained and involved, while a dedicated team identifies potential improvements and waste reduction activities. The reduced waste volume is then processed by an external waste treatment specialist (certified as a secondary raw material producer) for further treatment, separation and reuse.

Both facilities have demonstrated that progress in preserving resources is well within reach and that these measures can reduce costs and improve processes. Next on their path to circularity, Santa Palomba and Dalmine plan to reduce their use of non-reusable materials and employ reusable materials for their own packaging. As an example, Dalmine now uses reusable packaging made from recycled plastic to ship components between factories.

Water

While the majority of our manufacturing processes are not water-intensive, clean water has become an increasingly scarce resource. As a result, we closely monitor how water is managed across ABB's operations.

To assess our facilities according to the level of baseline water stress of the local watershed, we make use of the World Resources Institute's Aqueduct global water risk tool. Of the 332 ABB locations mapped in 2022, 36 face an extremely high level of water stress and 58 face a high level. The tool not only helps us assess water stress at our sites, but also the levels of groundwater depletion, flood risk and seasonal variability of water availability at our sites. All of this data informs our efforts to better manage water risk.

For all ABB sites in stressed watersheds, total water withdrawals in 2022 amounted to 1,112 kilotons, 39 percent of our total water withdrawal.

The use of closed-loop processes and other strategies to recycle or reuse water is the foundation of our approach to saving water. In 2022, such processes saved 65 percent of all industrial water use and 80 percent of all cooling water use at ABB sites worldwide. There are 13 projects currently under way to improve water management across ABB, with expected annual savings of 17 kilotons.

Materials

To reduce and, where possible, eliminate the use of hazardous materials from our operations, we rely on the ABB List of Prohibited and Restricted Substances. This list applies to every aspect of our operations, including procurement, product development, production processes, products, packaging materials, service activities and construction sites.

This is a heavily regulated area of activity, and we update the list twice yearly in keeping with local and international regulations and legislation. These include the TSCA, Prop 65, REACH, RoHS, POP and other local material compliance legislation, both within and beyond the European Union. We are also tracking likely future regulatory requirements regarding PFASs in the EU and the United States, DPP in the EU, and the ECO design regulatory requirements that will come into force in 2025.

We have developed a companion guide to the list to help ABB's suppliers meet their obligations – which include partnering with us to identify and prevent restricted substances from entering ABB's supply chain. In addition, ABB's Global Terms and Conditions for suppliers and our Supplier Code of Conduct address prohibited and restricted substances in the context of regulatory compliance.

In 2022, we launched 13 new projects to reduce and phase out the use of hazardous substances. The reduction of hazardous substances is typically addressed on a site-by-site basis because of the variety and specialized nature of our Group's products and processes.

ABB's four business areas have full ownership of their respective product material compliance obligations, which include the EU requirements for chemicals and products listed in the Substances of Concern in Products (SCIP) database.

04
Social progress

PILLAR OVERVIEW

We promote social progress

At ABB, we take care of our employees and promote social progress around the world.

We create safe, fair and inclusive working environments where our colleagues can succeed and develop. By continuing to invest in reducing workplace injuries, improving well-being, increasing diversity and inclusion and targeting a top-tier employee engagement score, we are making ABB a place where people want to work and build their careers.

Our support for social progress is underpinned by our respect for people and human rights. As an organization, we embed human rights considerations into our decision-making processes – both by prioritizing them in the risk analyses we perform for our value chain, and by building awareness, knowledge and understanding of them throughout our businesses.

In the communities where our employees and customers live and work, we engage with and support local organizations and people who are making a meaningful social difference. In ABB's supply chain, our Sustainable Supply Base Management (SSBM) program enables us to ensure that our suppliers meet our high expectations for environmental, social and governance performance.

We have established four sustainability targets to reflect how we are working to promote social progress. The first target is to achieve a yearly reduction in lost-time incidents. The second is to double the proportion of women in senior management roles to 25 percent by 2030 from a 2019 baseline. The third is to achieve and maintain a top-tier employee engagement score in our industry. And the fourth is to provide impactful support for a range of community-building initiatives.

Since introducing our 2030 sustainability targets to promote social progress, we have made continuous progress:

Targets 2030	2019 baseline[1]	2022 status
Zero harm is caused to our people and contractors - we aim for a yearly reduction in lost time from incidents (LTIFR value = 0)	0.246	0.143
Increase proportion of women in senior management roles to 25%	11.7%	17.8%
Achieve a top-tier employee engagement score (out of 100)	71	76
Expand programs for community engagement	n/a	Guidance for emergency and disaster relief aligned with the new operating model

1 Where a baseline applies.

CASE STUDY

Projects, initiatives, and achievements from ABB in India

ABB strives to support communities according to their local needs. We often support a portfolio of programs at the country level, so that we can positively impact communities around our facilities while also providing volunteer opportunities for ABB employees. For example, ABB's country-level organization in India has a long, rich history of community engagement, ranging from educational programs for students of all ages to diversity and inclusion initiatives and from healthcare to local environmental projects.

ABB India's flagship educational initiative is its scholarship program with the Lila Poonawalla Foundation. Launched in 2019, the program provides 200 scholarships per year to economically challenged young women. These scholarships help them pursue degrees in the disciplines of their choice at engineering colleges in several regions of India and is supplemented with mentoring activities provided by ABB volunteers.

ABB India also runs educational programs to assist local communities, including a skill development initiative for unemployed youth in Kolar, Karnataka. Under a partnership with the Sambhav Foundation, a total of 120 candidates – one-third of them female – have received IT skills training, and 240 candidates have completed training as domestic assistant electricians. All of these candidates have been successfully placed with employers following course completion.

Three more projects have been carried out with the Association of People with Disability. The first of these, at the Shradhanjali Integrated School, aims to mainstream 200 children with disabilities. The project helps develop curricula, formulate individual support plans, including occupational therapy and physical therapy, and provide training for parents. A second project aims to provide early intervention services, screening 2000 children to identify needs and provide support for rehabilitation and capacity-building. A third project provides appropriate interventions for children with developmental delays. This first-of-a-kind initiative offers holistic rehabilitation services for communities via a mobile rehabilitation van equipped with assistive and adaptive devices.

ABB India also supports water management projects in drought-prone tribal villages in the Nashik district. ABB India has worked in partnership with a local organization to construct seven check dams, with three completed in 2022. The check dams have improved water table levels and water availability during the summer for people and livestock in the region.

Combining ABB's interest in education and the environment, ABB partnered with Paryavaran Mitra ("Friends of the Environment") to develop an environmental education program for students at 98 government schools in Nelamangala. The program – which covers water and sanitation, energy, waste management, biodiversity and climate change – also provides teacher training activities and customized manuals for teachers and students.

The breadth and depth of the programs provided by ABB's country-level programs is notable, and we are proud of the efforts of our people to give back to the communities where they live and work.

Occupational health & safety

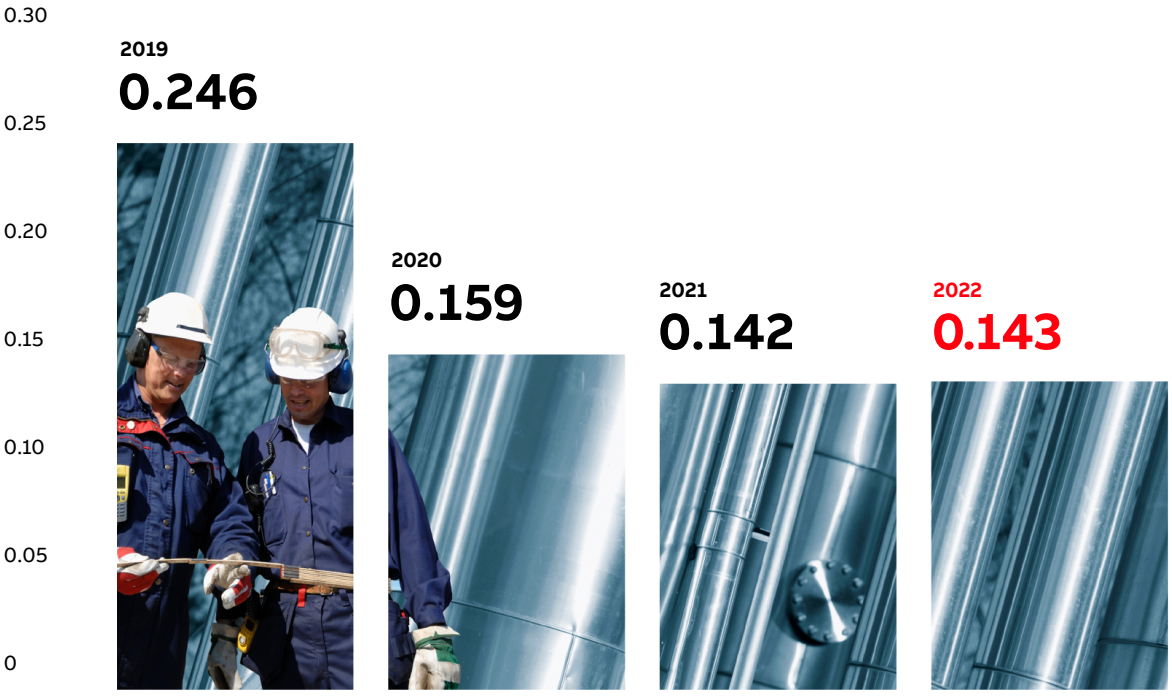
Target 2030: Zero harm is caused to our people and contractors; we aim for a yearly reduction in lost-time incidents

Safety is the foremost standard by which we measure ABB's performance. Our long-term success, reputation and standing as the best partner for our customers and other stakeholders depend on our ability to ensure the safety of our people.

We achieved our safety target in 2022. Our lost-time injury frequency rate (LTIFR) of 0.14 was down from the 0.25 we recorded as a baseline in 2019. LTIFR is defined as work-related injuries that result in at least one day away from work per 200,000 hours worked (equivalent to 100 full-time employees per year).

In 2022, ABB recorded zero workplace-related employee fatalities and zero workplace-related contractor fatalities, with the caveat that every safety incident has the potential to result in a fatality. Over the past decade, ABB has built a robust safety culture, and we are proud of the downward trend in the total number of serious incidents we have experienced since 2014. However, we refuse to become complacent about our strong safety record. Instead, we diligently seek to ensure that all hazards and incidents are reported and investigated and that we learn from them and avoid similar incidents in the future.

Safety at ABB
Lost-time injury frequency rate (LTIFR)



Under ABB's decentralized business model, our business areas and divisions are encouraged to design and implement their own safety programs. As a result, their programs vary widely, adopting strategies customized to the specific risks faced by each division, service product group or industry. Over the years, their safety programs have proved to be highly effective at reducing or eliminating conditions that can lead to incidents. For example, ABB Electrification's Global Electrical Safety team identifies common electrical hazards across ABB and develops actions to address the risks and opportunities they pose. The team is also responsible for sharing and promoting lessons learned and best practices across ABB, as well as for developing and implementing new training courses to address ABB's changing business portfolio, such as our increased focus on electrical vehicle charging and our growing reliance on lithium battery systems. ABB Electrification also initiated and ran its own pilot program in 2022 to test out Proxxi, a special voltage-detecting wristband; field service engineers using this device in the United States, Switzerland, Singapore and Spain will report back on its effectiveness.

ABB's safety-first approach is exemplified by the construction and commissioning of ABB Robotics' new factory in Shanghai (China). During construction, we required the landlord, construction contractors and ABB personnel to acknowledge safety as the highest priority; this consideration dominated each stage of the facility's construction. To help local workers follow ABB's safety requirements and standards at all times, we employed safety experts on site full-time. On a daily basis, we evaluated and then mitigated the risks posed by people, procedures, equipment, tools and activities. We also made sure that the landlord, construction firm, its subcontractors and ABB's safety experts conducted daily safety inspections and Sustainability Observation Tours (SOTs). This granular approach to safety continued after the factory commenced operations in September 2022. As of November 2022, we had zero lost-time incidents and have identified 493 hazards, 99.5 percent of which have been resolved. In addition, 81 SOTs have now been undertaken at the factory by managers.

Supporting the overall health and well-being of our employees is a priority at ABB, and we dedicate much time and effort to providing them with a broad spectrum of resources. Mental illness affects one in four people globally, a situation that was exacerbated by the pandemic. Our businesses have responded with a wide range of initiatives. For example, in 2022, ABB Motion continued to run its "Are you ok?" mental health training program, which it first launched at the end of 2021. The program, composed of a series of training modules for staff and managers, was made available both online and in person in nine languages. In addition, to celebrate World Mental Health Day in October 2022, ABB Motion held an "Are you ok?" week. The week was packed with training sessions delivered in multiple languages, and employees shared their personal stories via social media posts. Since the launch of "Are you ok?," 2,300 employees – roughly 10 percent of ABB Motion's global workforce – have completed its training programs.

At the same time, we continue to strengthen the overall governance of ABB's safety activities by means of regular council meetings and steering committees. These ensure proper corporate monitoring of corrective actions and lessons learned. With this critical input, ABB's corporate leadership and its business areas can identify, align and collaborate on company-wide improvement programs.

Among our cross-Group security initiatives, we run a robust travel risk management program that prepares travelers for their trips, oversees their security in high-risk areas, monitors 24/7 any changes in the risk landscape, and offers support for security and medical emergencies while traveling. Our partner International SOS plays an important role in exercising our duty of care for our employees and contractors.

Our safety teams were active throughout ABB in 2022, coordinating preparations for and responses to emergency situations, conducting internal safety inspections, obtaining third-party verifications for our health, safety and well-being reporting, and developing procedures to investigate work-related injuries and incidents. In addition, our safety teams provided occupational health and safety (OHS) trainings to employees to raise awareness and reduce operational health and safety incidents; and they introduced OHS criteria to ABB's procurement processes and contracts.

Diversity & inclusion

Target 2030: Double the proportion of women in senior management roles to 25 percent, using 2019 as our baseline, within our comprehensive diversity and inclusion framework

The diversity and inclusiveness of ABB's workforce has a positive impact on our company and society at large. Recruiting the talent to be found across genders, generations, abilities, sexual orientations, ethnicities and diversity of thought yields dividends for our employees, our organization and our communities.

Our 2030 sustainability target – to double the proportion of women in senior management roles – is also a target of our broader Global Diversity and Inclusion Strategy 2030.

Women in senior management

At ABB, senior managers are defined as employees in Hay grades 1–7

In 2022, ABB increased the proportion of female senior managers to 17.8 percent[5], up from 16.3 percent in 2021.

To build on these results, in 2022, we continued to run mentoring and leadership development programs across all business areas. These programs strengthen our pipeline of female talent by providing women at ABB with professional guidance, support and high-level networking opportunities. In addition, these programs create mutually supportive communities of women that extend across divisions and business areas, further enabling them to achieve their career goals and advance to more senior positions at ABB.

Our four business areas have taken full advantage of the ABB mentoring and leadership development programs, and in some cases have seen fit either to modify them or create their own versions. For example, to ensure the promotion of females within the organization, in 2022, ABB Electrification ran a leadership program it developed the previous year in partnership with Catalyst and other women's organizations. Also in 2022, one of ABB Electrification's divisions continued to run its own global mentoring program for women, which it created in 2020. At ABB Process Automation, 111 high-potential women participated in the business area's Women Development Program in 2022; one of their divisions also created the hashtag #HerStoryatABBEnergyIndustries to inspire women in key roles to share highlights from their professional careers and insights from their personal lives. And the Female Mentoring and Development Program, a joint collaboration launched by ABB Motion and ABB Robotics and Discrete Automation, marked its fourth year in 2022. This past year, the program opened its application process to every woman working in those business areas and began to monitor the career progress of current mentees and program alumnae. ABB Motion took further steps in 2022 to attract external female talent to ABB by launching a new initiative called LeadHer.

At the local level, in 2022, ABB Motion Italy launched "Women in Motion," a new female leadership program. Run in cooperation with Valore D., an Italian association promoting gender equality and inclusive culture, the program's first 81 participants were provided with special training and coaching sessions. And in 2022, ABB Sweden was recognized with the Industry Gender Equality Award 2021 for the achievements of its Motor Starting & Safety unit, where 41 percent of its managers are female.

As part of our commitment to promote gender equality and women's empowerment in the workplace, marketplace and community, in 2022 ABB adopted the United Nations Women's Empowerment Principles and signed the CEO statement of support. Additionally, as announced in 2022, ABB will propose one additional female member for election to the Board of Directors at the Annual General Meeting in 2023, which will help strengthen the Board's gender diversity.

5 This figure excludes the proportion of female senior managers from ABB Turbocharging, which was divested as Accelleron in 2022.

CASE STUDY

Strengthening our commitment to gender equality

In support of

WOMEN'S EMPOWERMENT PRINCIPLES

Established by UN Women and the UN Global Compact Office

ABB has a stake in and a responsibility for gender equality and women's empowerment. On International Women's Day in 2022, we made an important commitment to closing the gender gap when we adopted the United Nations Women's Empowerment Principles. Established by the UN Global Compact and UN Women, the principles offer guidance to businesses on how to promote gender equality and women's empowerment in the workplace, marketplace and community.

Gender equality is one of the key goals of ABB's Global Diversity & Inclusion Strategy 2030. By embracing the WEPs, ABB agreed to work collaboratively in multistakeholder networks to foster business practices that empower women. These business practices include high-level corporate leadership for gender equality, education, training and professional development for women and promotion of equality through community initiatives and advocacy.

After signing a statement of support for the WEPs, ABB CEO Björn Rosengren said: "At ABB, we see diversity as a core strength. Gender diversity is a key goal of our people and sustainability strategies, and we aim to increase the number of women in senior management roles as well as female early talents."

In parallel with adopting the WEPs, ABB expanded its Gender Equality Week, adding a range of new activities in 2022. These included a virtual meeting of ABB executives, employees and UN Women representatives, as well as unconscious bias webinars and other activities to raise awareness of stereotypes and discrimination.

Diversity and inclusion targets

Complementing our 2030 sustainability target for increasing the representation of women in senior management, we have set three internal ABB targets for diversity and inclusion:

1. to achieve equal gender balance among our early talent hires
2. to provide broad access for our people to employee resource groups (ERGs)
3. to improve our inclusion scores in the annual employee Engagement Survey

In 2022, 41.3 percent[6] of our early talent hires were women.

We were proud of the achievements of our employee resource groups in 2022. The mission of these voluntary, employee-led groups is to champion diversity initiatives and embrace the differences that make us unique, thereby fostering an environment of inclusion, equity and belonging at ABB. We have established ERGs for women, young professionals, senior professionals, Asians, Blacks, Hispanics/Latinx, LGBTQ+ employees, employees with disabilities and military veterans, among others.

To improve employees' sense of inclusion at ABB, our business areas have embraced ownership of the targets and taken a series of proactive steps. ABB Motion, for example, ran inclusive teams workshops. These manager-led sessions trained 1,161 colleagues in 2022, equipping them to contribute more effectively to an inclusive environment, where differences are appreciated and respected. To follow up on the workshops, managers are provided with briefing sessions so they can accurately disseminate new content and materials to their teams.

Other programs have addressed issues related to the LGBTQ+ community and people with disabilities. These initiatives included a global LGBTQ+ reverse mentoring pilot and an LGBTQ+ sensitization program in India. For the reverse mentoring program, 16 senior leaders volunteered to be paired with LGBTQ+ employees at ABB. This pairing aimed to help senior leaders better understand the challenges these individuals face, raise their awareness of the community and generate action plans to implement within the company.

For more than 20 years, ABB has been proud to partner with the Special Olympics, and our people were on hand in June 2022 when the Special Olympics National Summer Games took place in Berlin. It was a celebration of inclusion for the athletes and for the ~100 ABB employees who volunteered to work at the event. In Switzerland we have been running programs that familiarize employees with the challenges faced by colleagues with a disability.

In parallel with the array of smaller programs under way at all levels of our company, we continued to run ABB's Global Unconscious Bias Program in 2022. At ABB, we rank

6 This figure excludes the proportion of female senior managers from ABB Turbocharging, which was divested as Accelleron in 2022.

diversity and inclusiveness among our core leadership competencies and have a wide selection of learning opportunities on this topic available to all of our people.

CASE STUDY

ABB employees turn out in force to support the Special Olympics

In June 2022 at the German Special Olympics in Berlin, around 4,000 athletes competed in basketball, beach volleyball, handball, table tennis and triathlon, among others. These athletes were supported and cheered on by some 100 volunteers from ABB, together with thousands of other volunteers and spectators.

The ABB volunteers at the event either requested time off or used vacation days to participate in the year's largest inclusive sports event in Germany. In addition to providing support for the athletes, some ABB employees participated in tandem activities, where a person with a disability would partner with a person without a disability to engage in such services as providing guest information or helping with award ceremonies. Among the many ABB employees who either attended or volunteered at the games were Carolina Granat, Chief Human Resources Officer, Adrienne Williams, Head of Corporate Responsibility, and Heidi Robertson, Group Head of Diversity & Inclusion.

At ABB, we are proud that our premium partnership with this event is more than just a financial commitment. Our people have consistently taken advantage of the opportunity to be actively involved in the Special Olympics in Germany at both the state and national levels. Since our partnership began in 2000, more than 3,400 employees have volunteered their time and energy to support this major sporting event.

To drive social progress within our company and throughout society, ABB has partnered with UN Women, the Society of Women Engineers, the Society of Hispanic Professional Engineers, the National Society of Black Engineers, Stonewall, Catalyst, FEMTEC, Parks, Open for Business, #EmbraceDifference and WeQual, among others. In 2022, ABB

continued its role as the Official Global Partner of FIA Girls on Track, an ABB Formula E project to empower girls and promote gender equality in motorsport and beyond.

CASE STUDY

LGBTQ+ reverse mentor program: from allyship to advocacy

Over the past two years we have made significant progress in raising awareness across ABB on the challenges and issues faced by members of the LGBTQ+ community. Most recently, we piloted a reverse mentoring program in which 16 senior leaders volunteered to be paired with LGBTQ+ employees at ABB. The pairing aimed to help senior leaders better understand the challenges these individuals face, raise their awareness of the community and generate action plans to implement within the company.

Under the guidance of Diversity Hub, a Polish think tank specializing in diversity and inclusion, leaders across ABB have been working to increase their awareness, understand challenges, identify opportunities to influence the ABB culture and remove barriers to inclusion. The reverse mentoring program proved to be a strong step in the right direction, enabling leaders at ABB to move from allyship to advocacy.

The feedback received to date from ABB senior leaders has been very positive. All of the participants say the program helped them to become better allies and to embrace the idea of full advocacy, progressing from providing passive support to stepping up and celebrating LGBTQ+ inclusion. Specific actions these leaders have taken include adding their pronouns to their signatures, enrolling their teams in LGBTQ+ online training sessions, and taking part in meetings with Encompass Pride networks.

The reverse mentoring program successfully leveraged the influence wielded by ABB's senior leaders to improve our company's culture in ways that will allow the full potential of all of our people to flourish.

Employee engagement score

Target 2030: Achieve a top-tier employee engagement score in our industry

As an organization, ABB is deeply interested in knowing what its people's on-the-job experiences are like. Our annual Engagement Survey helps us understand how our people feel and lets them voice their opinions on a broad set of topics. The survey helps us see what is going well in the organization, so we can build on our strengths. It also serves as a formal mechanism through which our people can provide us with transparent feedback on areas where we can improve, along with their concrete suggestions.

We partner with the Glint platform from LinkedIn to benchmark ourselves against our peers.

In our 2022 employee Engagement Survey, ABB received a total employee engagement score of 76 out of 100, compared with scores of 74 in 2021, 75 in 2020 and 71 in 2019. We scored above the benchmark for eight questions, at the benchmark for nine questions, and below the benchmark for 18 questions.

Overall, we have made steady progress since the survey's launch in 2019, when many of our scores were significantly below the benchmark. This year, we came in slightly above the external benchmark, boosted by our strong scores on the topics of safety climate (87), integrity (83) and role clarity (81). We are gratified that these results reflect our company's sharp focus on safety and integrity and that we have successfully created clear roles and responsibilities for our people. Based on the Glint external benchmark, the survey results suggest that we are a leading company in terms of safety, communication flow between managers and teams, and accountability.

For each of the individual survey questions, the feedback we received was broadly positive. Of the 35 items that could be compared with last year's survey, we saw an improvement in 29, while six items stayed at the same level. It was particularly rewarding to see the improved scores for work-life balance and barriers to execution, as teams in the businesses and functions have been working to address these areas, in line with past recommendations.

Participation in the 2022 Engagement Survey reached a record high level of 82 percent, with more than 85,000 ABB employees taking part, thanks largely to a rise in the number of production employees who completed the survey. This result compares favorably to the 78 percent response in 2021, 73 percent in 2020 and 65 percent in 2019, when the survey was first launched.

In addition, we received 113,266 comments. This decrease from the 147,803 comments received in 2021 was expected, since the survey featured only one open-ended question in 2022, vs. two in the previous year. Additionally, thanks to technological improvements in Glint's platform, comment boxes that employees may have clicked on but not filled in are no longer tallied as comments. This past year, we received more than 25,500 actionable suggestions for improvement; these targeted suggestions are particularly valuable because teams can immediately use them to kickstart action planning processes. As always, we are grateful for the critical insights our people have provided, and we will use them to make ABB an even better place to work.

113,226
comments received

82%
response rate
(=85,878 employees)
in **2022**

is an improvement
compared to
78%
achieved in **2021** and

65%
response rate in (baseline)
2019 when the survey
was introduced

104,259
ABB employees invited
to the **2022** Engagement Survey

in **2022** ABB received a total
employee engagement score of
76/100

compared to
74/100
in **2021**

71/100
in **2019** (baseline)

Community engagement

Target 2030: Provide impactful support for community-building initiatives around the world

ABB has a longstanding tradition of active engagement in the communities in which its employees and customers live and work. As part of our 2030 sustainability strategy, we are reinforcing that engagement by providing impactful support for community-building initiatives.

ABB's approach to community engagement combines strategic corporate partnerships with country-level projects to address local needs. We aim to assist the most vulnerable and to support community-building in education, diversity and inclusion, community healthcare, and poverty and disaster relief.

COMMUNITY ENGAGEMENT HIGHLIGHTS:
OUR EMPLOYEES AND OUR BUSINESS AREAS SUPPORTED OUR COMMUNITIES

40
countries worldwide

$10.2
million donated

4,050
person-days volunteered

400+
community projects and charities

Our largest program is a corporate-level agreement with the International Committee of the Red Cross (ICRC), which provides humanitarian protection and assistance to victims of armed conflict and other forms of violence. During 2022, as a special initiative to support the humanitarian effort in Ukraine, we contributed more than CHF 2.2 million in employee and Group funds to the ICRC response. In addition, ABB employees in several countries took it upon themselves to travel to the borders of Ukraine to transport refugees from the country to safe locations, while others donated such essentials as food and warm clothing.

Education has long been a focus of ABB's community engagement activities. Since 2007, ABB has funded the ABB Jürgen Dormann Foundation for Engineering Education, which helps financially disadvantaged engineering students in 12 countries. In 2022, the foundation supported 91 students at 13 universities.

CASE STUDY

Preparing people to thrive in an age of robotics and automation

In 2022, ABB expanded its global Robotics and Automation education program with several new training centers, including our €100 million global innovation and training campus in Austria. The new site, along with new regional training centers in the UK, Germany, Brazil, Sweden and Vietnam, raises the number of ABB's Robotics and Automation training facilities to more than 40 around the world. More than 30,000 students from high schools, colleges and universities, as well as apprentices and staff, now participate in our training programs each year.

The sites complement the business area's other instructional offerings, which include software suites and hardware, in the form of collaborative robot cells and application packages. Through more than 100 global partnerships with schools and universities, ABB works with educators to generate curriculum materials that will train young people and prepare them for the jobs of tomorrow.

The Robotics and Automation education program was developed to bridge a critical skills gap that has been identified by our research. In a 2022 survey of U.S. and European business leaders conducted by ABB, 74 percent of European and 70 percent of U.S. businesses said they planned to re- or nearshore operations to improve the resilience of their supply chains. The majority of these businesses view automation as a key to enabling these shifts and plan to invest in robotics and automation in the next three years.

Despite this growing appetite for automation, ABB's 2022 global education survey found a significant shortfall in the education and training needed for the automated workplaces of the future. Only one in four educational institutions currently make any use of robots as part of their teaching programs.

For more information on our drive to prepare people for success in an age of robotics and automation, please visit the webpage ABB Robotics in Education .

We also continued our local commitments to promote STEM education and careers, particularly for girls and women. ABB's scholarship and mentoring programs continued in China, Estonia, Hungary, India, Italy, Sweden and the United States, among other countries. Many of these academic programs include modules that provide students with practical experience in real industrial environments and assist them in developing soft skills to enhance their employability upon graduation. In 2022, ABB marked 20 years of support for Junior Achievement, a non-profit organization that runs entrepreneurship and job preparation programs in Italy. In 2022, 50 ABB employees served as "dream coaches" in this program, providing their knowledge and expertise to over 870 students.

CASE STUDY

Smart grid lab in Vietnam

The Industrial University of Ho Chi Minh City (IUH) has launched the first university Smart Grid Lab in Vietnam with support from ABB. Located within the Electrical, Electronics, Control and Automation Faculties, this lab will give 350 students a year the opportunity to build the skills they need to address the power network challenges of the future.

The lab offers an advanced distribution grid setup equipped with a range of ABB solutions that allow students to visualize how a power grid operates in real time. As the fast-moving megatrends of urbanization and digitalization collide with the necessary shift toward renewable energy sources, it is essential that the next generation of engineers understand the complex technical interactions among power systems, control systems and power protection systems.

Partnerships with educational institutions are crucial to address energy challenges, and we support such initiatives that help prepare people to thrive in the future. The young engineers who have begun to hone their skills at the Smart Grid Lab in Vietnam will help ensure that power grids continue to evolve in a way that builds resilience and avoids shortages and outages as the energy transition accelerates.

In 2022, we added a range of major new initiatives to the large number of educational, technical, entrepreneurial and hands-on training programs that ABB runs for young people. These initiatives included support for the establishment of the first university Smart Grid Lab in Vietnam, our sponsorship of the Science Olympiad in the United States for K-12 students, and the inauguration of our expanded training center in Berlin.

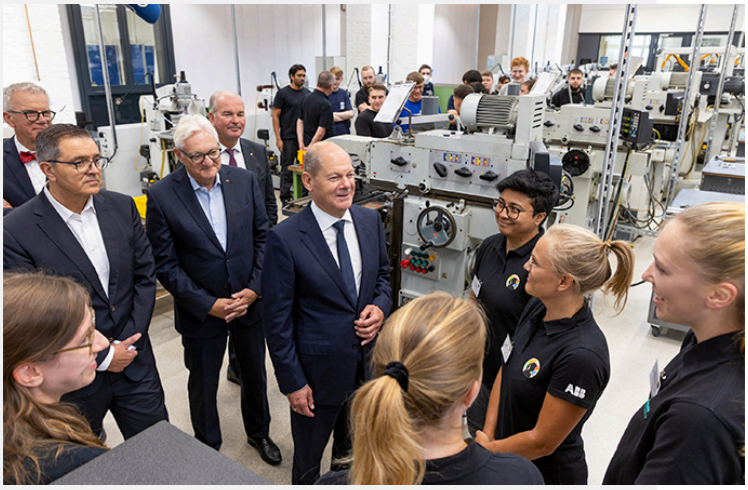
Across the world, we also made donations or provided services and other forms of support to vulnerable people and those affected by natural disasters, such as the hurricanes, tornadoes and floods that occurred in the United States and Pakistan. In the United States, ABB employees were able to donate to help their colleagues in need by making tax-deductible gifts to the ABB Employee Relief Fund. The ABB Foundation, funded by ABB in the United States, provides a large portion of the relief fund and covers program costs and fees. Cash grants are available to U.S.-based full- and part-time employees or temporary contract workers who experience a catastrophic disaster. The fund is administered by E4E Relief, a leading operator of relief funds for large companies.

ABB's employees were active over the past year, providing assistance to those suffering from food insecurity. Through donations and volunteer activities, ABB employees supported food banks and other programs in Australia, Canada, Hungary, the United Arab Emirates and the United States.

Over the course of 2022, we were unable to initiate the research and consultations that had been planned to develop our community engagement strategy further. We will kick off this process in 2023, with a view to developing a harmonized approach to volunteer activities and community programs.

CASE STUDY

Learning Factory Industry 4.0 at ABB in Berlin



At ABB, we understand the critical importance of preparing apprentices to meet the industrial needs of tomorrow. To this end, in 2022, ABB in Germany inaugurated its expanded training center in Berlin. The “Learning Factory Industry 4.0” forms the centerpiece of a new multifunctional extension building. The site contains cutting-edge training facilities that prepare trainees for the digital future of manufacturing.

Creating training centers of this kind benefits not only ABB but also the many companies we partner with. By working together and supporting each other, we can stay competitive and make important joint contributions to strengthening the talent pool that represents the future of Germany’s workforce.

The facility resembles a highly automated industrial plant and is designed to impart a holistic understanding of digitally networked production processes. Under the guidance of their instructors, the trainees work to produce a model of an ABB Formula E racing car at the plant. With the new expansion, the ABB training center in Berlin more than doubled its capacity, welcoming an additional 205 apprentices working in 17 different apprenticeships.

These young people are now learning skills that will set them up for long-term success in an Industry 4.0 world. For example, apprentices at the facility learn to monitor networked systems and to rectify any faults that arise in the production processes themselves. This remarkable new resource is making it possible for apprentices to master critical new skills in a clear and practical way.

Human rights

ABB's commitment to responsible business practices includes respecting and promoting human rights as expressed in the International Bill of Human Rights. We support the principles contained within the OECD Guidelines for Multinational Enterprises and the ILO Core Conventions on Labour Standards, and we are committed to implementing the United Nations Guiding Principles on Business and Human Rights (UNGPs) throughout our operations and our value chain. These commitments are underpinned by the ABB Code of Conduct, the Supplier Code of Conduct, the Human Rights policy and the Social policy. These codes and policies clearly set forth our expectations for every individual who works for ABB or engages with us as a business partner or through our supply chain.

Our goal is for human rights to be well understood and managed in all ABB operations along the value chain and integrated into ABB's daily business. To achieve this goal, we have developed a five-year plan for human rights activities that focuses on capacity building, strengthening risk identification and management, and monitoring performance. A human rights working group, consisting of a representative from each business area and the Group Head of Corporate Responsibility, supports the implementation of our human rights plan through operational management review and coordination, sharing best practices, and monitoring and reporting performance progress. The working group reports to the ABB Sustainability Council.

To ensure that we understand our stakeholders' expectations and improve our effectiveness in safeguarding human rights, we stay in close contact with a wide variety of stakeholders, including customers, investors, suppliers, civil society representatives and international organizations. ABB also engages with and learns from human rights specialists; these activities include peer learning reviews at the Global Business Initiative on Human Rights and participation in the annual United Nations stakeholder forum in Geneva, the World Business Council for Sustainable Development (WBCSD) and local network meetings of the UN Global Compact.

Strengthening human rights risk management and mitigation processes

Human rights criteria are part of the standard risk review process for screening major ABB projects, for prequalification and assessment work with ABB suppliers, and for examining potential mergers and acquisitions. We have also established a human rights self-assessment process for our own operational sites. We are continually evaluating and adjusting these processes to ensure they meet legal requirements and the expectations of ABB's stakeholders.

During 2022, we undertook a high-level human rights risk assessment and a review of our human rights due diligence (HRDD) framework to identify key gaps and potential

measures for improvement. The reviews were conducted at the Group level and involved a range of internal stakeholders and subject-matter experts, as well as desktop research. The reviews were facilitated by external human rights experts and were conducted according to the requirements of the OECD Guidelines and UNGPs. External stakeholder engagement will be undertaken as a next step to validate the conclusions.

The scope of the human rights risk assessment that was conducted included all internationally recognized human rights, as per the Universal Declaration of Human Rights, which were clustered into 12 human rights issues for ease of analysis. We mapped our full value chain and identified the human rights risks per value chain element, considering all potentially affected people. We consolidated the findings to assemble a high-level human rights risk map. We then prioritized risks according to their severity and likelihood, in order to define an updated risk matrix, with salient human rights issues consolidated at the Group level. Inherent risks were evaluated, without considering existing preventive or mitigation measures.

Salient human rights issues

Environmental issues impacting human rights	Child labor	Impact on communities and land rights
Contributing to conflict and use of force	Corruption and bribery	Fair employment
Human trafficking and modern slavery	Freedom of association and collective bargaining	Information security and data privacy
Non-discrimination and harassment	Health and safety	Technological change impacting human rights

For the review of our HRDD framework, we assessed the current implementation status of the six core elements of HRDD – policy commitment, risk and impact assessment, risk-based measures, embeddedness, tracking and communication, grievance and remedy – assigning scores for 31 criteria. The study concluded that ABB has taken a solid approach to managing human rights. It also identified a range of key actions to undertake to reach our targets.

Main actions for 2023 will include:

- Updating ABB's human rights policy to better align with international requirements
- Conducting gap and risk assessments at business level to define business-specific actions and appropriate governance systems
- Refining the Group-wide human rights risk management system and human rights roadmap to ensure appropriate risk-based measures are in place and regular risk assessments are conducted

In addition to the Group-wide initiative to develop new risk assessment methods for both our sales channels and supplier relationships, in 2022 we continued to embed the new review criterion based on country risk. This criterion was introduced in 2021 to reinforce our risk screening process for major projects.

We also continued our program for conducting human rights self-assessments at selected ABB sites. This program was piloted in 2021, with 50 sites in 26 countries undertaking the assessment. Following a review of the pilot, the program was revised, improved and then systematically promoted and implemented across all of ABB's business areas. In total, 58 sites in 25 countries undertook the assessments in 2022. The program will continue in 2023.

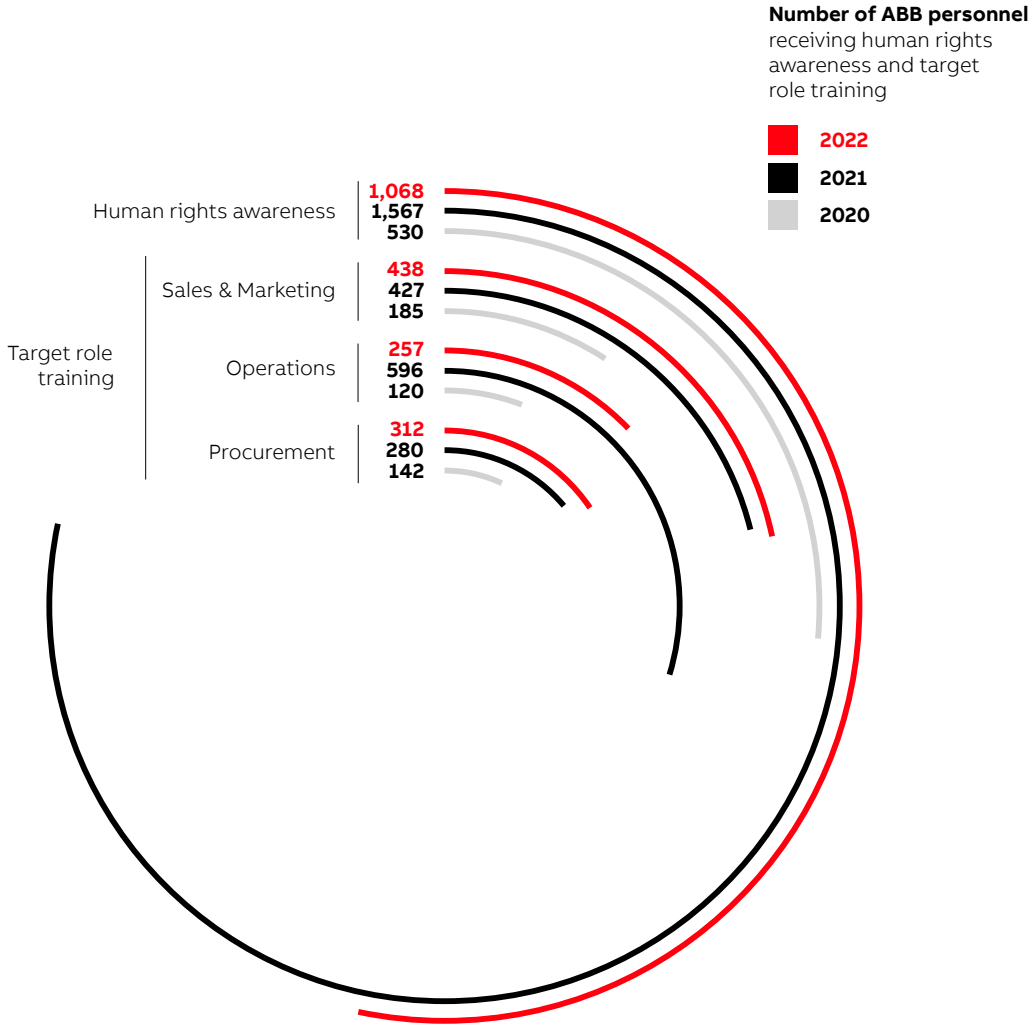
To address human rights risks related to our suppliers, we rely on our Sustainable Supply Base Management system and our conflict minerals management program. For further information on these two programs, please refer to the chapter "Responsible sourcing."

Building ABB's internal capacity regarding human rights

After an intensive three years of capacity-building activities, with programs targeting both management and functional roles, in 2022, we reduced the pace at which we were delivering internal trainings and took a step back to review our overall program and its contents.

Following extensive internal consultation, we concluded that the program has been successful in raising awareness of human rights at all levels of the organization and embedding human rights expertise within each business area and division. However, there was a desire for content to be delivered more flexibly and for the courses to be self-paced, in smaller units, while including more practical elements so participants could work through actual situations and dilemmas. Through 2023, we intend to restructure our capacity-building programs to provide clearer learning pathways for participants, allowing for more self-directed learning as well as in-depth training.

During the year, we maintained the engagement activities of ABB's Human Rights Champions Network via regular network calls and newsletters, and we formally defined the role descriptions for the champions to assist in setting individual objectives. We continued to make general human rights awareness training available to all ABB employees and managers, with 4,687 employees completing general human rights e-learning courses, and provided targeted trainings for management and job roles specifically exposed to human rights risks.



4,130

Number of hours
of instructor-led human rights training delivered to ABB personnel during 2022

At the end of 2022, we surveyed our network to understand how ABB Human Rights Champions engaged with their businesses during the year and to identify where further support or improvement were needed. The results not only showed the benefits of business-specific engagement activities but also reinforced the need for new capacity-building opportunities.

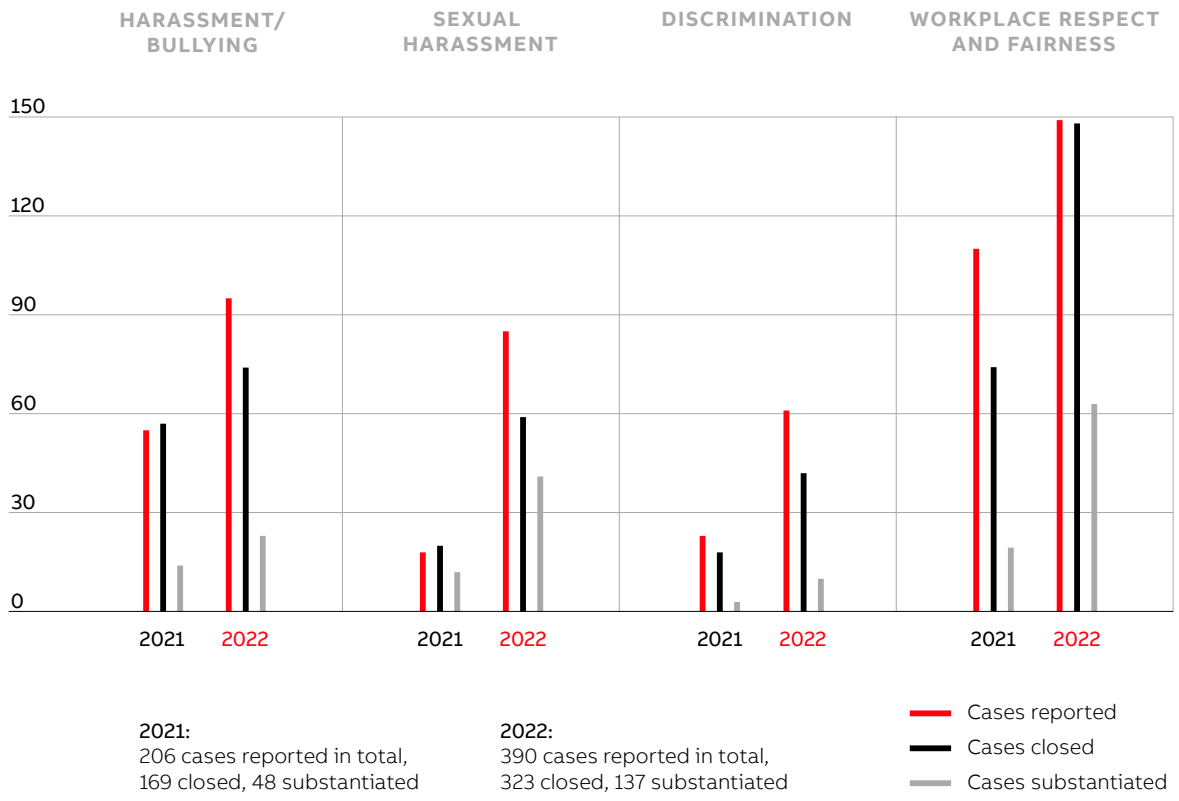
ABB's 2022 human rights performance

ABB has internal reporting and allegation management processes to deal with any alleged violations of ABB's Code of Conduct, including matters relating to human rights. Our allegation management team aims to listen attentively and respond swiftly to employee concerns and manage a fair justice adjudication process aligned with our values. That said, work continues to enhance employee trust in our integrity and

reporting programs and to ensure concerns of potential non-compliance with our Code of Conduct are reported in a timely fashion.

Our ABB Way transformation – a companywide reorganization of business strategy, operating model and culture transformation – commenced in 2020. This transformation included various enhancements aimed at the health of our workplace including launch of an open job market, new leadership learning ecosystems, innovations in our integrity learning and speak up culture, and messaging regarding the use of our business ethics helpline to report any non-compliance with our Code of Conduct.

Following this progress, in 2021 we launched Straight Talk, an Integrity initiative intended to drive open discussion and continuous learning regarding integrity successes and failures within our organization and the key learnings from those. We coupled this with (1) clarity that all potential non-compliance with the Code of Conduct should be reported to our business ethics helpline, and (2) focus on driving safety in reporting to build confidence in our zero tolerance for retaliation risk. As a result, we have seen greater employee engagement in the use of our learning tools intended to drive heightened integrity awareness.



2021:
206 cases reported in total,
169 closed, 48 substantiated

2022:
390 cases reported in total,
323 closed, 137 substantiated

We have seen a consistent increase since 2021 in total concerns reported to our business ethics helpline. We attribute this to the increased confidence in our reporting and allegation management processes noted above coupled with more in-person interactions, coming out of the pandemic. Irrespective of this, we will be taking specific steps over the next 12-18 months to further promote integrity, psychological safety, and accountability for poor workplace behaviors.

Investigations carried out in 2022 resulted in varying levels of corrective actions, including coaching, retraining and warnings. Twenty nine employees were terminated.

In the past year, we did not receive any reports of child labor, forced labor or threats to freedom of association with respect to our employees. For further information about findings of non-conformance within our supply chain, please refer to the chapter "Responsible sourcing."

CASE STUDY

Learning from experience

At ABB, we are always looking for ways to improve our oversight and management of critical topics such as human rights. That is why, in 2021, we launched a program to conduct human rights self-assessment processes at our own operations and conducted pilot assessments at 50 sites in 26 countries. In 2022, we analyzed the results and feedback from the program participants and concluded that there was a need to provide clearer instructions for on-site questions and better-defined roles and responsibilities, as well as enhanced training, for all participants.

Therefore, we restructured the self-assessment questionnaire, making sure that it provided more objective guidance on scoring to limit the possibility of misinterpretation. We also worked to improve comparability across questionnaires. The new format that was devised not only describes ABB's expectations for each of the topics more clearly, but also facilitates the development of improvement plans to strengthen outcomes.

ABB Motion led this review process, setting ambitious training and self-assessment targets as part of their overarching commitment to embedding human rights into their business processes. As a result of the review, progress toward human rights-related targets is now systematically monitored and integrated into the Sustainability Strategy Review dashboard for each of ABB Motion's divisions. Other ABB business areas have taken notice of ABB Motion's best practices and are implementing comparable plans appropriate to their operations and risk levels.

05
Integrity & transparency

PILLAR OVERVIEW

We create a culture of integrity and transparency

At ABB, it's not just about what we do - but how we do it - to provide value to businesses, communities and our customers and stakeholders around the world. Working with integrity is what grants us our license to operate, and it's the standard that we expect across our entire value chain. We know that to continue to be successful in what we do and be a global employer of choice, our commitment to a culture of integrity and transparency must be resolute.

Our Global Integrity Program sets our mandate to deliver an operating environment which protects the integrity of our organization which is adaptive to risk and overall fit-for-purpose. It is driven by processes, role-specific upskilling, third-party management processes, and reporting and monitoring activities across our four business areas and all our corporate functions. We test and monitor our governance framework and integrity program and know that it needs to be flexible and adaptive in an increasingly complex and challenging global environment.

Our Code of Conduct is the foundation of our integrity program. It's the framework which sets the standard for the way we work and what we expect of our employees and stakeholders around the world. Through promoting and instilling a culture of integrity and transparency at ABB, we strive to create a business model where sustainable business practices are one and the same as our operating model.

Doing business with integrity and transparency also means responsibly sourcing materials and services. We aim to do this by proactively identifying, analyzing and mitigating environmental and social risks related to our procurement activities. ABB works to prevent minerals that are mined in conflict zones from entering our supply chain.

Since introducing our 2030 sustainability targets to create a culture of integrity and transparency along the extended value chain, we have made steady progress:

Targets 2030	2019 baseline[1]	2022 status
Global framework for assessing and mitigating third-party integrity risks through risk-based due diligence and life cycle monitoring[2]	n/a	This target measures the implementation of a global framework for assessing third party integrity risks. It is an ongoing and critical organization-wide, integrity-based enhancement, which changes how we onboard and manage the life cycle of our relationships with suppliers, sales channels and customers. • **Suppliers (buy-side)** In January 2022, we launched various integrity due diligence and risk management enhancements within our global supplier onboarding process. • **Sales Channels (sell-side)** In 2022, we finalized the design of various integrity due diligence and risk management enhancements within our onboarding process for new sales channels. The process was launched at selected ABB locations in October and November, with global launch planned for March 2023.
Global Integrity Program underpinned by accountability for integrity and an adaptive risk management strategy gained from insights through targeted learnings, transparent reporting and monitoring[2]	n/a	This target measures the implementation and effectiveness of our Global Integrity Program through how we drive individual accountability for integrity and adapt our risk management strategy to real-time data insights gained from integrity-based learnings, reporting and monitoring. 1. **Trust KPI –** The rate of severity level 1 and 2 investigations where the reporter disclosed their identity: • Year 1 (January 1, 2021, to December 31, 2021): 57% of reporters. • Year 1 & 2 (January 1, 2021, to December 31, 2022): 60% of reporters. 2. **Engagement KPI –** The volume of unique visitors on the Integrity Awareness Portal (IAP) for integrity learnings: • Year 1 (January 1, 2021, to December 31, 2021): 25.46% of employees with online access. • Year 1 & 2 (January 1, 2021, to December 31, 2022): 69.86% of of employees with online access.

Targets 2030	2019 baseline[1]	2022 status
At least 80% of supply spend in focus countries[3] covered by Sustainable Supply Base Management (SSBM)	n/a	Using a risk-based approach, a mid-term 2025 target has been set, focusing on high-risk suppliers in focus countries[3].
Mid-term target for 2025: At least 80% of spend on high-risk suppliers in focus countries[3] covered by SSBM	n/a	22%
Management sustainability incentive with yearly target	n/a	The individual component of the Annual Incentive Plan (AIP) for Executive Committee (EC) members,with a weight of 20 percent, consists of a combination of up to 3 quantitative and qualitative goals, of which at least 2 are sustainability-related (e.g. GHG emissions, safety or female leadership goals).

1 Where a baseline applies.

2 Targets have been adjusted in 2022.

3 Argentina, Brazil, Bulgaria, China, Colombia, India, Indonesia, Malaysia, Mexico, Peru, Poland, Saudi Arabia, South Africa, Thailand, Turkey, Vietnam.

Integrity

As part of ABB's sustainability strategy 2030, we set two targets specifically addressing our integrity and transparency objectives. In 2022, we revised these targets to better reflect our approach to how we aim to embed integrity into ABB's operating model. The targets now reflect how we aim to manage our third-party relationships, how we aim to support integrity learning and upskilling, how we aim to use analytical insights to identify risks and adapt our strategy, and how we publicly report in line with global sustainability standards.

Our integrity & transparency targets for 2030 are:

Target 2030: Implement a global framework for assessing and mitigating third-party integrity risks through risk-based due diligence and life cycle monitoring

Target 2030: Implement a global integrity program underpinned by accountability for integrity and an adaptive risk management strategy gained from insights through targeted learnings, transparent reporting and monitoring

Our progress against these targets is also reported in our ABB Integrated Report 2022. We implemented various integrity initiatives during the year that significantly contributed to our targets. Collectively, these initiatives strengthened our accountability for integrity, increased our transparency, and expanded our bribery and corruption risk-detection and mitigation capabilities. We plan to build on these initiatives in 2023, leveraging them to drive us forward towards ABB's integrity and transparency targets for 2030.

2022 integrity enhancements

ABB's integrity program is the product of over 20 years of development. In recent years it has been significantly transformed. Spanning our operations, it always strives to reflect best practices where we operate. At the core of our ongoing transformation we are delivering processes, tools and learnings, aimed to remediate issues identified over time. The specific enhancements we made in 2022 are part of this transformation, with a particular focus on our Anti-Bribery and Anti-Corruption (ABAC) program and workplace culture and behaviors.

Rollout of new Third Party Management process

In 2022, we enhanced our "Third Party Management" (TPM) program. Focusing initially on our suppliers (buy-side) and sales channels (sell-side), these enhancements bolster our risk-based approach to selecting third parties and aim to enable more effective oversight and monitoring of their activities and overall performance. During the course of 2023, we will extend the application of the enhanced TPM program and processes to our existing third-party population, aiming to enhance management of third-party risk.

Rollout of Anti-Bribery & Anti-Corruption program

We launched an enhanced upskilling program focused on Anti-Bribery and Anti-Corruption (ABAC) competencies highlighting the crucial role that our employees play in ensuring ABB's sustainable and competitive future. For now, the program targets employees that face the highest ABAC risks in their day-to-day functions – namely those in gatekeeper functions or in customer and government-facing positions. This program is ongoing throughout 2023.

Integrity Gateway 2.0

We released version 2.0 of our Integrity Gateway, consolidating into one tool the recording and management of employee conflict of interest disclosures and requests for gifts, travel, hospitality, donations and sponsorships. The tool is governed by approval workflows which, depending on the request made, trigger approval from line managers, Human Resources, Legal & Integrity, and Communications colleagues. This aims to bring a global approach to these requests and is a step forward in how we monitor and manage certain ABAC risks in our business.

Monthly promotion of Straight Talk case studies

We stepped up our efforts to expand employee engagement with Straight Talk, our internal platform for sharing real-life integrity successes and failures at ABB. Through one-pagers and accompanying internal communications, we share integrity lessons learned from our colleagues to drive a speak-up culture through regular messaging on our reporting channels. Key leaders are expected to lead by setting the tone from the top. To this end, they are provided with comprehensive data on our investigation portfolio for use in their team business meetings. This transparent initiative has been well received across ABB and continues to serve as a key method of communicating integrity learnings.

CASE STUDY

Leadership in legal sustainability

In 2022, ABB Electrification's Legal & Integrity team took a leading role in addressing the broad issue of legal sustainability with a pilot project examining how to work within the impending regulations of a more sustainable future.

Around the globe, new climate initiatives are resulting in the rapid development of increasingly complex environmental and sustainability legislation. Moving forward, companies will need to invest in internal legal resources that can navigate uncertainty and support even more robust integrity programs that help ensure compliance with laws and regulations.

In its pilot, the Legal & Integrity team launched a group of four projects. First, to raise awareness of the issue, it held roundtable discussions on sustainability legislation and the associated landscape on its blogs and Yammer, ABB's internal discussion platform; second, to encourage cross-function collaboration, it conducted an analysis of EU legislation proposals related to electrification; third, it developed sustainability clauses to be incorporated in contracts; and fourth, it assessed where it could best support ABB Electrification's supply chain transparency programs.

The ultimate goals were to clearly define the Legal & Integrity team's environmental and social corporate governance activities and responsibilities with respect to other ABB functions, and to create a network of ABB lawyers interested in various developments in legal sustainability. By monitoring developments in legal sustainability issues and proactively anticipating how they will proceed, the pilot will help define current and future priorities. While the initiative began within ABB Electrification, it has asked ABB's other business areas to share information on similar or other interesting projects within the space of legal sustainability.

Global settlements

Kusile statement

Based on findings during an internal investigation, the Company self-reported to the SEC and the DoJ, in the United States, to the Special Investigating Unit (SIU) and the National Prosecuting Authority (NPA) in South Africa as well as to various authorities in other countries potential suspect payments and other compliance concerns in connection with some of the Company's dealings with Eskom and related persons. Many of those parties have expressed an interest in, or commenced an investigation into, these matters and the Company is cooperating fully with them. The Company paid $104 million to Eskom in December 2020 as part of a full and final settlement with Eskom and the Special Investigating Unit relating to improper payments and other compliance issues associated with the Controls and Instrumentation Contract, and its Variation Orders for Units 1 and 2 at Kusile. The Company made a provision of approximately $325 million which was recorded in Other income (expense), net, during the third quarter of 2022. In December 2022, the Company settled with the SEC and DOJ as well as the authorities in South Africa and Switzerland. The matter is still pending with the authorities in Germany, but the Company does not believe that it will need to record any additional provisions for this matter.

Looking forward, we will continue to serve all customers and markets where we operate today, including South Africa. We are firmly committed to fulfilling our contractual obligations on the Kusile project to achieve successful and sustainable project completion, and we stand with South Africa as a key partner in the country's power utility sector. Our project objective remains unchanged – to enable a stable electric grid for the people of South Africa.

Responsible sourcing

Target 2030: At least 80 percent of our supply spending in focus countries will be covered by our sustainable supply base management approach, which includes surveillance of environmental, social and governance performance

We partner with our suppliers to ensure that ABB's sustainability expectations, aspirations and targets are understood and met. The ABB Supplier Code of Conduct, which is available in multiple languages, sets forth our expectations in clear terms. The Supplier Code of Conduct reflects the 10 principles of the UN Global Compact, as well as the core tenets of the broader ABB Code of Conduct.

Our Sustainable Supply Base Management approach, first implemented in 2021, addresses sustainability topics and performance at each stage of supplier life cycle management, forming part of our "beyond audit" initiative. Building on its successful predecessor – the Supplier Sustainability Development Program (SSDP), which operated from 2010 to 2020 – SSBM integrates sustainability principles more comprehensively into ABB's supplier selection and qualification processes.

Through SSBM, we address issues that fall within six main categories: general management, labor rights, social benefits, health, safety and the environment. The approach is backed by risk-based monitoring that covers a broad range of suppliers and incorporates Group-wide standards and targets. The management and implementation of the SSBM system is handled by ABB's four business areas, allowing for business-specific programs and processes. The approach is governed by a steering committee and a working group comprised of representatives from our business areas and the corporate sustainability team.

Under SSBM, new suppliers registering with ABB must review and acknowledge ABB's Supplier Code of Conduct. In addition, to qualify for consideration, suppliers must complete a self-assessment that incorporates questions on how suppliers manage issues such as labor and human rights, the environment, health and safety, and integrity, as well as management of their own supply chains. Depending on the results from the self-assessment and other parameters, further due diligence is carried out. Once the supplier has become part of ABB's supply chain, a risk-based approach is used to monitor their sustainability performance, much like the procedure under the previous SSDP system. Under this approach, we engage with the supplier for training, onsite assessments and follow-up audits until closure of all deficiencies is achieved.

We consider geographical and commodity risks (health, safety and environmental risks associated with the manufacture and supply of certain commodities) to prioritize among suppliers selected for on-site assessments.

ABB's 2030 sustainability strategy includes an ambitious target to cover at least 80 percent of our supply spending in focus countries with SSBM by 2030. We have also introduced a mid-term target to cover at least 80 percent of our high-risk supply spending in focus countries by 2025. Our calculation of the coverage of the SSBM program considers supplier self-assessments (such as those received during supplier onboarding and qualification) and on-site assessment processes.

To assess the effectiveness of our approach, we have set a goal of closing 75 percent or more identified risks from supplier assessments by 2025. Closure timelines for identified risks vary from a month to a year, depending on the severity of the case. Some complex issues may require a joint effort to resolve, under a longer timeline. Due to the ongoing identification of new risks and the time required to mitigate them, the closure rate of identified risks can never reach 100 percent.

2022 highlights in responsible sourcing

At the end of 2022, 22 percent of high-risk supply spending in focus countries was covered by our SSBM system, and 87 percent of identified risks were closed. Plans are in place to ensure that we achieve our mid-term target by 2025.

In 2022, we assessed 58 suppliers at their sites. The number of on-site assessments completed in 2022 was lower than planned due to continuing travel and access limitations in certain jurisdictions, most notably China. In many cases, virtual assessments were not possible due to limited personnel availability associated with access restrictions. Where on-site assessment possibilities were limited, we focused our attention on closing out corrective action plans, resulting in a risk closure rate significantly above our target (75 percent) and five percentage points higher than in 2021. Planning for 2023 has been adjusted to incorporate the additional assessments remaining from 2022.

In other activities related to responsible sourcing, we trained 26 ABB employees and 54 suppliers in the course of the year. ABB terminated relationships with seven suppliers due to unsatisfactory progress on their corrective action plans.

To strengthen ABB's monitoring and evaluation capacity, in 2022, we held further courses of ABB's lead assessor qualification training program in China and India. The program combines classroom sessions with field experience. All program graduates are prepared to perform independent SSBM assessments and follow-up audits. During the year, 18 employees from China, India and Poland were either qualified or requalified to be ABB lead assessors.

2022 highlights in responsible sourcing

22% of high-risk supply spend in focus countries was covered by SSBM

7 Businesses terminated with suppliers due to unsatisfactory progress on their respective corrective action plans

87% of identified risks were closed

58 suppliers assessed on-site

26 ABB employees and

54 supplier teams trained in responsible sourcing during the year

In 2022, we revised our method for assessing location-based risks. We also reviewed ABB's Supplier Code of Conduct to clarify our commitments in certain key areas and to address changes in the regulatory environment since the last revision. The review process incorporated feedback from suppliers and customers, as well as consultations with both internal and external subject-matter experts. The updated Supplier Code of Conduct will be released in early 2023, along with internal and external training materials.

During the year, three cases of working conditions that could involve modern slavery at ABB suppliers were reported via our business ethics hotline. No allegations have been substantiated; two of these cases were still under investigation at the close of the year.

CASE STUDY

Framing ABB's approach to sustainability in the supply chain

Ensuring that our supply chain is sustainable is vital to each of the pillars of our 2030 sustainability strategy. While we run several longstanding supply chain programs that serve to address various aspects of sustainability, we decided to reexamine these programs in 2022.

The rationale for reviewing our existing programs was straightforward enough: We wanted to establish a common action plan, to clarify targets and to ensure appropriate and comprehensive governance for purposes of internal accountability. We also wanted to articulate an overall supply chain sustainability approach – one that would be consistent with our sustainability strategy, easy to understand, and capable of facilitating engagement with our suppliers.

We established a cross-business steering committee to review the established programs related to material compliance, conflict minerals and sustainable supply base management. The steering committee also focused on understanding the status of ABB's newer programs related to circularity and GHG emissions in the supply chain. The committee consulted broadly within ABB, with suppliers and with other external stakeholders, including customers and investors.

The resulting Supply Chain Sustainability Framework is structured around the four pillars of our sustainability strategy, establishing clear ambitions for each pillar.

Conflict minerals

We remain focused on understanding and limiting ABB's exposure to conflict minerals, as defined by section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. We regularly request supplier information on tin, tungsten, tantalum and gold (which comprise the most prominent conflict minerals, sometimes referred to as "3TG") sourced from conflict-affected and high-risk areas (CAHRAs), as defined under EU Regulation 2017/821. We filed ABB's annual Conflict Minerals Report with the U.S. Securities and Exchange Commission for the ninth consecutive year, summarizing ABB's approach to minerals and the status of our programs.

ABB's efforts to source minerals responsibly are reinforced by the ABB Policy on Conflict Minerals and our continued collaboration with the Responsible Minerals Initiative (RMI), which works to encourage smelters and refiners to undergo audits aligned with OECD guidelines.

Under our own internal programs, we also cooperate with suppliers on an ongoing basis to ensure that ABB's products do not contain minerals from mines that support or fund conflict within the Democratic Republic of Congo or adjoining countries and CAHRAs.

Senior management sustainability incentives

Target: Management sustainability incentive with yearly target

ABB ensures alignment between its management and its sustainability strategy through the application of sustainability measures and targets to its Annual Incentive Plan (AIP) as well as its Long-Term Incentive Plan (LTIP). The mechanism by which this is accomplished was revised last year. Beginning in 2022, all Executive Committee members had at least two sustainability related performance goals incorporated into the individual components of their AIPs.

Additionally, a corporate sustainability goal with a weighting of 20 percent has been incorporated into ABB's 2022 LTIP. The measure relates to a reduction in ABB's scope 1 and 2 GHG emissions versus the 2019 baseline. The LTIP, which is linked to defined performance measures, is awarded to all EC members and about 100 senior executives. The final award under the LTIP is subject to the achievement of the plan's specific targets over a period of three years, from 2022 to 2024.

For further information, please refer to ABB's Compensation Report 2022 .

06 Appendix

Approach to reporting

This report was compiled as of February 23, 2023, and published on February 24, 2023. We prepared the report in accordance with the GRI Standards (2021) for the reporting period January 1 to December 31, 2022. The GRI content index is available as a separate document. In addition to the GRI Standards, the framework for our Sustainability and Integrated Reports is based on the EU Non-Financial Reporting Directive (NFRD), the Sustainability Accounting Standards Board (SASB), the European Union's common classification system for sustainable economic activities, known as the EU Taxonomy, the Task Force for Climate-related Financial Disclosures (TCFD) Recommendations, and the 10 principles of the UN Global Compact.

We aim to maintain alignment with best practices in our sustainability reporting, and we closely follow all pertinent developments in international sustainability reporting. This includes applicable regulations such as the amended Code of Obligations in Switzerland, the Corporate Sustainability Reporting Directive (CSRD) in the European Union, and the proposed SEC Rules to Enhance and Standardize Climate-Related Disclosures for Investors in the United States, as well as developments in reporting standards such as the European Sustainability Reporting Standards and the IFRS Sustainability Standards.

Our Sustainability Report covers ABB's material economic, environmental and social impacts and how we manage them. Omission from the material issues addressed in our report does not mean that an issue is not managed. In addition to our annual sustainability reporting, ABB reports quarterly on a selection of our strategic sustainability KPIs.

Reporting boundaries

Our formal sustainability reporting system covers all ABB Group companies worldwide, including wholly owned subsidiaries, majority-owned joint ventures and direct and indirect participations (as listed in the ABB Corporate Governance Report 2022, pages 23-24). Newly acquired businesses are typically reflected in annual sustainability reporting in the subsequent year. Businesses that are divested in the first half of the year are typically excluded from annual sustainability reporting. For a list of acquisitions and divestments in 2022, please refer to the ABB Integrated Report 2022, pages 118-119.

Data collection processes

We rely on a global, online data reporting system to measure and gather data from across ABB. The system is used to file reports on hazards, incidents, sustainability

observation tours and environmental performance at every production and service site, as well as a majority of our office locations. It is also used to collect annual social data from every country. This centralized reporting system simplifies data collection and facilitates greater transparency.

The data in this report relating to health, safety and our social performance covers 99 percent of ABB employees. Data relating to our environmental performance (including energy, emissions, water and waste) was sourced from 332 ABB sites and offices, covering approximately 91 percent of employees. Data on the environmental performance of the remaining employees, who are located at non-manufacturing sites with limited impacts, is generated by estimating energy, water and waste parameters pro rata. In 2022, we added 1.3 percent of our employees to these estimates when we removed 50 of our smallest sites from our reporting system, representing a fraction of a percent of our environmental impact.

Calculation of energy and GHG data

All GHG emission factors for fuels used at our sites are sourced from the GHG Protocol's "Emission Factors from Cross-Sector Tools" (March 2017). They include the emissions of CO_2, CH_4 and N_2O. Biogenic emissions from biofuels include only CH_4 and N_2O emission factors. Global warming potential (GWP) factors for CH_4, N_2O and SF_6 follow the IPCC's AR5 report. Emissions from ABB's vehicle fleet are based on lease contract distances and tank-to-wheel gCO_2/pkm (grams of CO_2 per passenger kilometer). We applied lab-to-road uplift factors from the International Council on Clean Transportation Europe to better reflect our vehicles' real emissions on the road vs. the laboratory.

ABB uses the market-based method to calculate and report scope 2 GHG emissions. For purchased electricity and district heating, we have obtained local emission factors from utilities. Scope 2 GHG emissions for electricity have also been calculated using the location-based method; for these calculations we sourced our data from the International Energy Agency (2022).

In our 2030 Sustainability Strategy, launched in 2020, we measure our progress against a 2019 baseline, which is adjusted to portfolio changes. The adjusted 2019 baseline is 639 kilotons.

The results are provided for comparison below:

Scope 2 GHG emissions from electricity	Kilotons CO_2e
Market-based:	51.9
Location-based:	305

Scope 3 GHG emissions are calculated using average emission factors together with inhouse data on, e.g., product performance, sales volumes, average lifetimes, and other data required to calculate emissions in the 13 out of 15 scope 3 categories that are

relevant for ABB. For example, the category “Purchased goods and services” includes all upstream (cradle-to-gate) emissions for the extraction, production and transportation of goods and services purchased or acquired by ABB in the reporting year, not included in other categories. Our calculation uses secondary data, applying spending data and global industry average emission factors per material consumed from life cycle inventory databases. In the category “Business travel”, emissions from air travel are calculated using emission factors, with radiative forcing (RF), published by the UK Department for Business, Energy & Industrial Strategy (BEIS) in its 2022 Government GHG Conversion Factors for Company Reporting. For the category “Use of sold products”, we calculated the emissions due to losses in equipment such as electric motors, drives, switches, switchgear and breakers during conduction, conversion, and transformation of electricity through our products. For products with a direct energy use, like industrial robots, we calculated the emissions due to the electricity-use during the product's service life.

Estimates

As this report was published in February 2023, the environmental data in the report is based on measured data for the first 11 months of 2022. For December, each site was required to estimate its environmental performance using data from December 2021 as a starting point and then to consider the impact of possible changes from the previous year. These may include physical changes at the site, changes in production volumes and weather conditions.

Changes in 2022

In order to extend our GRI reporting, ABB has decided for the first time to report on GRI Disclosure 301-1 (Materials used by weight or volume) in its 2022 reporting, replacing our previous disclosure on hazardous materials. Additionally, we have decided not to report on GRI Disclosure 302-4 (Reduction of energy consumption) in this report as we are currently revisiting the calculation methodology for this KPI.

Independent assurance

KPMG AG has been engaged by ABB to provide independent assurance for selected GRI KPIs disclosed in the Sustainability Report and for reported progress against the 2030 sustainability targets. KPMG AG's full Assurance Statement, including opinion and basis of opinion, is available in the following section "Assurance statement."

Certified ABB management system information

ISO management system standards enable organizations to improve performance by specifying repeatable steps that the organizations can implement to achieve their goals and objectives.

ISO 14001 sets forth the criteria for an effective environmental management system and maps out a framework for the implementation of such a system. ISO 50001 sets energy management standards, providing organizations with a clear way to improve energy use through the development of an energy management system. ISO 45001 is the international standard for occupational health and safety management systems. It is aimed at mitigating any factors that could harm the mental or physical well-being of workers; ISO 45001 replaces the OHSAS 1800 family of standards, which was withdrawn on March 31, 2021.

- 80 percent of our manufacturing and service sites are covered by a certified environmental management system (ISO 14001 or equivalent)
- 79 percent of our employees at manufacturing or service sites are covered by a certified occupational health and safety management system (ISO 45001 or equivalent)
- 32 percent of our energy use at manufacturing or service sites is covered by a certified energy management system (ISO 50001 or equivalent)[7]

Sustainable Development Goals

To reflect how the selected case study examples in this report contribute to the United Nations' Sustainable Development Goals (SDGs), we have mapped the main impacts of each case study to the sub-goals of the SDGs. Based on the results from this process, we have selected those SDGs most impacted by each of the case studies. During the course of the materiality assessment we plan to conduct in 2023, we intend to comprehensively map the positive impact ABB is having on the SDGs.

Additional disclosures

All of ABB’s policies, statements and declarations related to the topic of sustainability can be found on our Group website.

7 Previously, we reported the coverage by certified energy management systems as percentage of employees at manufacturing or service sites. We have decided to report the coverage by certified energy management systems in this report as percentage of energy use at manufacturing or service sites to reflect the coverage more accurately.

Assurance statement

Independent limited assurance report on selected quantitative and qualitative sustainability information in ABB Ltd's Sustainability Report 2022

To the Board of Directors of ABB Ltd, Zurich

We have undertaken a limited assurance engagement on ABB Ltd's (hereinafter "ABB") following selected quantitative and qualitative sustainability information in ABB's Sustainability Report for the year ended December 31, 2022 (hereinafter "Sustainability Information"):

- 2022 performance data marked as "assured" in the GRI disclosures table, starting on page 102 of the Sustainability Report.
- The status and progress for the 2030 sustainability targets within the tables presented on pages 25, 40, 55, and 82-83 of the Sustainability Report.

Our assurance engagement does not extend to information in respect of earlier periods or to any other information included in the Sustainability Report or within the ABB Annual Reporting Suite (consisting of the Integrated Report, the Financial report, the Corporate governance report, and the Compensation report) for the year ended December 31, 2022, or any other report, including any images, audio files or embedded videos.

Our Limited Assurance Conclusion

Based on the procedures we have performed as described under the 'Summary of the work we performed as the basis for our assurance conclusion' and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Sustainability Information in ABB's Sustainability Report for the year ended December 31, 2022, is not prepared, in all material respects, in accordance with the GRI Sustainability Reporting Standards (GRI Standards) as described on pages 95-98 of the report, or according to the self-developed criteria by ABB for status and progress indicators for certain 2030 targets (collectively the "Reporting Frameworks").

We do not express an assurance conclusion on information in respect of earlier periods or to any other information included in the Sustainability Report or within the ABB Annual Reporting Suite (consisting of the Integrated Report, the Financial report, the Corporate governance report, and the Compensation report) for the year ended December 31, 2022, or any other report, including any images, audio files or embedded videos.

Understanding how ABB has Prepared the Sustainability Information

The Reporting Frameworks have been used as criteria references for the Sustainability Information. Consequently, the Sustainability Information needs to be read and understood together with these Reporting Frameworks.

Inherent Limitations in Preparing the Sustainability Information

Due to the inherent limitations of any internal control structure, it is possible that errors or irregularities may occur in disclosures of the Sustainability Information and not be detected. Our engagement is not designed to detect all internal control weaknesses in the preparation of the Sustainability Information because the engagement was not performed on a continuous basis throughout the period and the audit procedures performed were on a test basis.

ABB's Responsibilities

The Board of Directors of ABB is responsible for:

- Selecting or establishing suitable criteria for preparing the Sustainability Information, taking into account applicable law and regulations related to reporting the Sustainability Information;
- The preparation of the Sustainability Information in accordance with the criteria of the Reporting Frameworks;
- Designing, implementing and maintaining internal control over information relevant to the preparation of the Sustainability Information that is free from material misstatement, whether due to fraud or error.

Our Responsibilities

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the Sustainability Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to the Board of Directors of ABB.

As we are engaged to form an independent conclusion on the Sustainability Information as prepared by management and the Board of Directors, we are not permitted to be involved in the preparation of the Sustainability Information as doing so may compromise our independence.

Professional Standards Applied

We performed a limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) Assurance Engagements other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the International Code of Ethics for Professional Accountants (including International Independence Standards) issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality, and professional behavior.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

Our work was carried out by an independent and multidisciplinary team including assurance practitioners and sustainability experts. We remain solely responsible for our assurance conclusion.

Summary of the Work we Performed as the Basis for our Assurance Conclusion

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Sustainability Information is likely to arise. The procedures we performed were based on our professional judgment. Carrying out our limited assurance engagement on the Sustainability Information included, among others:

- Assessment of the design and implementation of systems, processes and internal controls for determining, processing and monitoring sustainability performance data, including the consolidation of data;
- Inquiries of employees responsible for the determination and consolidation as well as the implementation of internal control procedures regarding the selected disclosures;

KPMG

— Inspection of selected internal and external documents to determine whether qualitative and quantitative information is supported by sufficient evidence and presented in an accurate and balanced manner;

— Assessment of the data collection, validation and reporting processes as well as the reliability of the reported data on a test basis and through testing of selected calculations;

— Analytical assessment of the data and trends of the quantitative disclosures in the scope of the limited assurance engagement;

— Assessment of the consistency of the disclosures applicable to ABB with the other disclosures and key figures, and of the overall presentation of the disclosures through critical reading of the Sustainability Report 2022.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

KPMG AG

Hans-Dieter Krauss
Licensed Audit Expert

Mohamad Midani

Zurich, Switzerland
February 23, 2023

KPMG AG, Badenerstrasse 172, CH-8036 Zurich

GRI disclosures table

Environmental

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
301-1	Materials used by weight or volume (kilotons)[1,2]					
	Metals	√	1,190	-	-	-
	Copper	√	93	-	-	-
	Aluminum	√	82	-	-	-
	Steel (incl. iron casting)	√	1,015	-	-	-
	Plastics	√	173	-	-	-
302-1	Energy consumption within the organization (gigawatt-hours – GWh)[3,4,5]					
	Biofuels	√	2.03	1.98	0.92	52.9
	Oil (11.63 MWh/ton)	√	7.1	6.8	7.3	49.0
	Diesel (11.75 MWh/ton)	√	4.6	2.0	3.5	4.4
	Coal (7.56 MWh/ton)	√	0	0	0	0

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
	Gas	✓	388	435	448	728
	District heat consumption	✓	107	127	125	208
	Electricity consumption	✓	909	981	1,031	1,635
	Total energy used	✓	**1,417**	**1,553**	**1,616**	**2,677**
	Electricity sold	✓	1.7	2.2	2	2
	Total energy consumption within the organization from renewable sources		741	**503**	321	409
	Total energy consumption within the organization from non-renewable sources		676	**1,050**	1,295	2,268
302-3	**Energy intensity (MWh/million $ sales)**[3,4,6]	✓	48	52	62	72
303-3	**Water withdrawal (kilotons)**[3,4]					
	Purchased from water companies	✓	1,991	2,162	2,523	3,896
	Groundwater extracted by ABB	✓	751	585	576	2,066
	Surface water extracted by ABB	✓	57	76	109	2,406
	Collection of rainwater	✓	5	5	4.2	9.8
	Waste water from external source	✓	10	11	12.0	21.7

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
	Water withdrawal from areas of water stress[7]	✓	1,112	1,044	1,072	2,266
	Total water withdrawal	✓	**2,815**	**2,839**	**3,224**	**8,401**
303-4	Water discharge (kilotons)[3,4]					
	Public sewer		1,727	1,840	2,018	3,591
	treated (percentage)		20%	27%	25%	36%
	untreated (percentage)		80%	73%	75%	64%
	Recipient		648	543	585	1,123
	treated (percentage)		25%	29%	29%	84%
	untreated (percentage)		75%	72%	71%	16%
	Hazardous treatment company		49	43	47	140
	treated (percentage)		59%	52%	45%	81%
	untreated (percentage)		41%	48%	55%	19%
	External use		1.5	0.74	0.01	0
	treated (percentage)		100%	99%	0%	0%
	untreated (percentage)		0%	1%	100%	100%

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
303-5	**Water consumption**[3,4]					
	Total water consumption from all areas[8]		389	412	580	643
	Total water consumption from all areas with water stress[7,8]		166	167	223	116
	Water recycled and reused[3,4]					
	Volume of water reused and recycled (kilotons)		894	953	1,033	8,051
	As percentage of total water withdrawal (%)[9]		32%	34%	32%	96%
304-1	**Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas**[10]					
	Number of ABB sites located in, or bordering to, a protected area		9	9	-	-

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
Greenhouse gas (GHG) emissions[11] (kilotons CO_2e)						
305-1	**Direct (Scope 1) GHG Emissions[3,4]**					
	Use of energy	✓	82	90	94	162
	Coolants[2]	✓	5.1	-	-	-
	SF_6[12]	✓	20	52	77	159
	Transport by own fleet[13]	✓	49	48	55	75
	Total scope 1 GHG emissions	✓	**156**	**190**	**226**	**396**
	Other					
	Biogenic CO_2 emissions[14]		0.7	0.7	-	-
305-2	**Energy indirect (Scope 2) GHG Emissions[3,4]**					
	District heat consumption	✓	16	19	18	33
	Electricity consumption	✓	52	195	318	569
	Total scope 2 GHG emissions	✓	**68**	**214**	**336**	**602**
	Total scope 1 and 2 GHG emissions	✓	**223**	**405**	**561**	**998**

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
305-3	Other indirect (Scope 3) GHG Emissions[15]					
	Purchased goods and services[16]	✓	7,261	5,346	5,760	5,760
	Capital goods		429	424	438	486
	Fuel and energy-related activities not in scope 1/2		43	44	44	51
	Up- and downstream transportation		500	500	760	760
	Waste generated in operations		15	19	17	24
	Business travel[17]	✓	93	71	85	159
	Employee commuting		180	175	187	187
	Up- and downstream leased assets		227	253	273	171
	Processing of sold products		0	0	0	0
	Use of sold products[18]		117,780	117,780	118,022	118,022
	End-of-life treatment of sold products		99	79	80	89
	Franchises		0	0	0	0
	Investments[19]		0	54	54	326
	Total scope 3 GHG emissions		**126,627**	**124,745**	125,720	126,034

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
305-4	**GHG emissions intensity (tons CO_2e/million $)**[3,4]					
	Tons CO_2 equivalent per million $ sales, Scope 1+2	√	7.6	14	21	27
305-7	**Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions (tons)**[3,4]					
	Volatile organic compounds (VOC)	√	481	592	668	1,128
	Emissions of NO_x and SO_x (tons SO_2 and NO_2)					
	SO_x from burning coal		0	0	0	0
	SO_x from burning oil and biofuels		10	8	8	77
	NO_x from burning coal		0	0	0	0
	NO_x from burning oil and biofuels		7	6	6	57
	NO_x from burning gas		84	93	94	156
306-3 (2016)	**Significant spills (total number)**[3,4,20]					
	Oil spills		2	8	0	9
	Chemical spills		0	0	5	4
	Emissions to air		1	0	0	6
	Others		0	2	0	7
	Total number of significant spills		**3**	**10**	**5**	**26**

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
306-3 (2020)	**Waste generated (kilotons)**[3,4]					
	Total waste (generated)	√	182	194	192	283
306-4 (2020)	**Waste diverted from disposal (kilotons)**[3,4]					
	Non-hazardous waste recycled	√	153	160	159	228
	Scrap metal recycled	√	118	124	124	167
	Other non-hazardous waste recycled	√	35	36	35	61
	Hazardous waste recycled[21]	√	4	4	3	7
306-5 (2020)	**Waste directed to disposal (kilotons)**[3,4]					
	Non-hazardous waste sent for disposal	√	21	22	24	41
	Sent to incineration with energy recovery	√	9.3	9.8	9.3	17.1
	Sent to landfill or other disposal method	√	11.6	12.6	15.1	24.2
	Waste from construction and demolition	√	0.5	-	-	-
	Hazardous waste sent for disposal[21]	√	3	7	5	7

Note: Due to rounding, numbers presented in the GRI table may not add to the toals provided.

1 Estimated with calculation model based on $ spend. Numbers include materials sourced both as raw material and part of components.

2 Reported in 2022 for the first time.

3 The table is not adjusted to portfolio changes. Power Grids (PG) is included in 2019 data but excluded from 2020 data. Mechanical Power Transmission is included in data until the end of 2021.

4 Results for these indicators are based on reported data covering 91% of employees in 2022, 96% in 2021, 95% in 2020, 93% in 2019, plus an adjustment for the remaining employees pro rata. See the "Approach to reporting" section for more details.

5 The energy use of our fleet of leased vehicles is not included in these data.

6 Includes all types of energy used within the organization.

7 In 2022, we aligned our definition of water stress to GRI and only include areas of 'extremely high' and 'high' level of water stress, excluding areas of 'medium to high' level of water stress. Data for 2019 to 2021 are restated.

8 We have restated the water consumption data for 2021, due to an error in how it was defined. 2021 was the first time we reported on this KPI.

9 Data on water reused and recycled as percentage of total water withdrawal have been restated for 2020 and 2021 due to an error in the definition of the KPI these years.

10 Sites responding "yes" to this question in yearly environmental questionnaire.

11 See "Approach to reporting" for more details on GHG emission calculation.

12 In 2019, we updated the factor used to convert SF_6 emissions to CO_2 equivalent to 23,500 kg CO_2e/kg SF_6, as recommended by the IPCC 2013 (Fifth Assessment Report).

13 Reported fleet emissions for 2020 and 2019 lag one year behind. See "Approach to reporting".

14 ABB considers only methane and N_2O emissions of biogenic emissions, following SBT guidance.

15 We continually update our methodologies for how to caclulate the different categories in our scope 3 emissions. See "Approach to reporting". Power Grids (PG) is excluded from all scope 3 data.

16 Includes estimations of upstream emissions from purchased steel, copper, aluminum, plastics, solvent-based products, and tap water. Improvement of calculation model in 2022 resulted in 17% increase of estimated upstream emissions from purchased goods.

17 Assurance scope only covers air travel. As of 2021 business travel data includes air travel, rented vehicles and hotel nights. In 2020 and 2019, business travel included air travel only. Data for air travel is calculated using the emission factors published by the UK Department for Business, Energy & Industrial Strategy in its 2021 "Greenhouse gas reporting: conversion factors 2021".

18 Data not yet calculated for 2022, which is why we have published 2021 data from our latest disclosure to CDP as our best estimate.

19 In 2022, ABB completed the divestiture of its stake in Hitachi Energy joint venture, why scope 3 related to Investments decreased to zero.

20 An environmental incident is regarded as significant if at least one of the following criteria applies to the incident: obligation to inform local authorities or a governmental agency about the incident and/ or regulatory violation; inspection by an environmental agency results in a formal complaint; environmental Notice of Violation, a Consent Order or a Potential Responsible Party (PRP) notification; imposition of a penalty or fine; significant impact on an ecosystem; costs related to the incident exceed, or may exceed, $10,000.

21 Hazardous waste as classified in the country where it is generated.

Social

GRI ref.	Indicator description	Assurance (2022 data)	2022		2021		2020		2019	
401-1	New employee hires and employee turnover (reflected in headcount)									
	Total workforce by region (ABB employees)									
	Europe		51,360		52,390		49,200		68,400	
	The Americas		25,950		25,750		27,600		35,200	
	Asia, Middle East and Africa		29,540		29,450		28,800		40,800	
	Total		**106,850**		**107,590**		**105,600**		**144,400**	
	Employee turnover (reflected in headcount)									
	Turnover of all employees[22]									
	Europe		7,032	14%	7,129	14%	8,570	17%	9,732	14%
	The Americas		5,726	22%	5,805	23%	3,849	14%	5,443	16%
	Asia, Middle East and Africa		4,438	15%	4,238	14%	4,252	15%	6,860	17%
	Total employee turnover: ABB Group		**17,196**	**16%**	**17,172**	**16%**	**16,671**	**16%**	**22,035**	**15%**
	Turnover of all female employees[22]									
	Europe		2,336	5%	2,303	4%	3,038	6%	2,871	4%
	The Americas		2,055	8%	1,920	7%	1,162	4%	1,553	4%
	Asia, Middle East and Africa		984	3%	973	3%	906	3%	1,399	3%

GRI ref.	Indicator description	Assurance (2022 data)	2022		2021		2020		2019	
	Total female employee turnover: ABB Group		**5,375**	**5%**	5,196	5%	5,106	5%	5,823	4%
	Employee hires (reflected in headcount)									
	Hires of all employees[22]									
	Europe		6,068	12%	4,799	9%	7,649	15%	11,560	17%
	The Americas		4,466	17%	3,970	15%	2,106	8%	4,221	12%
	Asia, Middle East and Africa		5,087	17%	4,732	16%	4,209	14%	6,121	15%
	Total employee hires: ABB Group		**15,621**	**15%**	**13,501**	**13%**	**13,964**	**13%**	**21,902**	**15%**
	Hires of all female employees[22]									
	Europe		2,033	4%	1,493	3%	2,799	6%	3,898	6%
	The Americas		1,613	6%	994	4%	742	3%	1,357	4%
	Asia, Middle East and Africa		1,337	5%	1,598	5%	1,006	3%	1,275	3%
	Total female employee hires: ABB Group		**4,983**	**5%**	**4,085**	**4%**	**4,547**	**4%**	**6,530**	**4%**
403-9	**Work-related injuries**									
	Employee work-related fatalities[23,24]	✓	0		0		1		1	
	Incident rate[25]	✓	0.00		0.00		0.00		0.01	
	Employee business travel fatalities[23,26]	✓	1		0		0		0	
	Incident rate[25]	✓	0.001		0.00		0.00		0.00	

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
	Contractor work-related fatalities[24]	✓	0	0	1	1
	Contractor business travel fatalities[23,26]	✓	0	0	0	0
	Members of the public fatalities[23]	✓	0	0	0	0
	Employee total recordable incident number[24,27]	✓	358	332	410	744
	Injury rate[25]	✓	0.31	0.29	0.31	0.47
	Contractor total recordable incident number[24,27]	✓	73	86	100	149
	Injury rate[25]	✓	0.41	0.45	0.46	0.46
	Employee lost time incident number[24]	✓	165	145	197	372
	Injury rate[25]	✓	0.14	0.13	0.15	0.23
	Contractor lost time incident number[24]	✓	30	49	56	96
	Injury rate[25]	✓	0.17	0.26	0.26	0.29
	Combined lost time incident number		182	195	253	468
	Combined lost time injury rate		0.143	0.142	0.159	0.246
	Employee lost days due to industrial incidents[28]		2,981	1,334	2,014	6,757
	Days lost rate[25]		2.6	1,2	1.5	4.3

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
	Employee occupational health illnesses[24]	✓	11	10	5	16
	Employee occupational health illness rate[24,25]	✓	0.01	0.01	0.00	0.01
	Sustainability Observation Tours (SOT) conducted[29]	✓	65,687	67,878	74,266	83,859
	SOT rate[29,30]	✓	5.28	5.15	4.31	5.52
	Hazards reported[24]	✓	250,741	248,038	270,985	336,747
	Hazards reporting rate[31]	✓	2.18	2.16	2.06	2.12
404-1	Average hours of training per year per employee					
	Training per year per employee (average hours) by employee category[32,33]					
	Top and senior managers		4.6	-	-	-
	Middle and lower managers		8.4	-	-	-
	Other employees		33.2	-	-	-
	Training per year per employee (average hours) by gender[32]					-
	Female		97	-	-	-
	Male		4	-	-	-
	Total workforce		30	-	-	-

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
404-3	Percentage of employees receiving regular performance and career development reviews[33,34]					
	Top and senior managers		98%	96%	94%	73%
	Middle and lower managers		95%	95%	92%	89%
	Other employees		85%	87%	90%	89%
	Total workforce		**92%**	**89%**	**92%**	**89%**
405-1	Diversity of governance bodies and employees					
	Composition of governance bodies					
	Board of Directors					
	Women in Board (percentage)		20%	20%	18%	18%
	Age group diversity (percentage)					
	<30 years old		0%	0	0%	0%
	30–50 years old		10%	30%	9%	9%
	>50 years old		90%	70%	91%	91%
	Number of nationalities		9	9	9	7
	Executive Committee					
	Women in Executive Committee (percentage)		22%	22%	22%	16%

GRI ref.	Indicator description	Assurance (2022 data)	2022	2021	2020	2019
	Age group diversity total (percentage)					
	<30 years old		0%	0%	0%	0%
	30–50 years old		33%	33%	33%	8%
	>50 years old		67%	67%	67%	92%
	Number of nationalities		7	7	6	8
	Employees in senior and middle management[35]					
	Women in senior and middle management		22%	22%	20%	18%
	Men in senior and middle management		78%	78%	80%	82%
	Total workforce (ABB employees)					
	Women in total workforce		28%	27%	26%	24%
	Men in total workforce		72%	73%	74%	76%
406-1	Incidents of discrimination and corrective actions taken[3]					
	Total number of incidents of discrimination		10	3	0	8
	Total number of incidents of harassment		64	26	36	19
415-1	Political contributions[3]					
	Financial and in-kind political contributions		0	0	$14,908	$1,260

Note: Due to rounding, numbers presented in the GRI table may not add to the toals provided.

22 2022 data excludes Accelleron and 2020 data excludes PG. Includes part-time employees. Turnover rate calculated as number of ABB employees (full- and part-time) leaving during the year/ total number of ABB employees (full- and part-time) as at December 31. For the purpose of this calculation, employees who leave the organization voluntarily or involuntarily whether due to dismissal, retirement, end of fixed-term contract or death in service or any other reason, are included. However, involuntary turnover arising out of divestments is excluded from the definition.

23 Fatalities include deaths occurring within one year as a result of injuries sustained and commuting is excluded.

24 Data covers incidents that happened at workplace (ABB facility, customer site, project site) and excludes incidents that occurred during business travel.

25 Rates are per 100 employees or per 200,000 contractor hours worked. Employees in the rates are defined as persons who are permanent or temporary employees, working full time or part time, in the employment of an ABB Group Company (ABBGC). Persons hired via work agencies where ABB provides supervision, defines work to be done, training are also included in this category. For 2022 this amounts to 114,897 FTEs.

26 Includes incidents during business travel by road. Air and rail travels are excluded.

27 Recordable incidents include fatal, lost time incidents, serious injury incidents, medical treatment injuries, occupational diseases and restricted workday cases.

28 Days lost are calendar days and are counted from the day after the incident.

29 SOTs are typically conducted by all line managers at all levels.

30 Rate per manager.

31 Rate is calculated per employee.

32 Scope includes centrally managed tools such as My learning, Harvard Spark, Harvard Manager Mentor, LinkedIn Learning. It covers both leadership and functional/technical learnings. Data are based on the extractions from the respective tools for internal employees (office workers and factory ones). Our plan is to work with the business to expand the coverage in 2023, identifying which other tools are in place locally to capture the additional hours of trainings delivered across business.

33 Top and senior managers: 1-7 grades; Middle and lower managers: Other line managers; Other employees: Individual contributors not considered as managers.

34 The calculation of performance review data is based on the population that is included in the global people performance management system (HR Group Tools). 100% of top and senior managers and of middle and low managers are covered in the HR Group Tools system and 66% of other employees. This is the only centralized reporting of performance management data that can be quantified and verified and is deemed the ‘eligible population.

35 This indicator focuses on senior and middle management and includes employees in hay grades 1 to 10. 2019 data includes PG.

SASB table

SASB requirement	SASB requirement – detail	ABB answer 2022
Energy Management	a. Total Energy Consumed (Gigajoules) b. Percentage Grid Electricity (%) c. Percentage Renewable (%)	a. 5,101,131 GJ; Summary of GRI indicators – 302-1 b. 63%; Summary of GRI indicators – 302-1 c. 52%; Summary of GRI indicators – 302-1
Hazardous Waste Management	a. Amount of hazardous waste generated, percentage recycled (Metric tons, %) b. Number and aggregate quantity of reportable spills, quantity recovered (number, kilograms)	a. 7,294 metric tons; 57%; Summary of GRI indicators – 306-4 b. 2 spills, a total of 107 liters of diesel and oil, not recovered; Summary of GRI indicators – 306-3
Product Safety	a. Number of recalls issued, total units recalled (number) b. Total amount of monetary losses as a result of legal proceedings associated with product safety	a. As of 2022, this number is not available on an aggregated level at ABB. b. Not applicable. Due to NDA agreements with third parties, we are unable to disclose monetary values resulting from legal proceedings with these third parties.
Product Lifecycle Management	a. Percentage of products by revenue that contain IEC 62474 declarable substances (% by revenue) b. Percentage of eligible products by revenue, that meet Energy Star® Criteria (% by revenue) c. Revenue from renewable energy-related and energy-efficiency-related products (reporting currency)	a. As of 2022, we are unable to respond to this question. Please refer to the section Materials. b. Only applicable to North America products. All ABB products are included in point c. c. Using the EU taxonomy as reference: In 2022 and for the first fiscal year, ABB reached a 10% Taxonomy-aligned revenue under the Climate Change Mitigation environmental objective that covers partially this requirement. For further details please refer to ABB's EU Taxonomy report.

SASB requirement	SASB requirement – detail	ABB answer 2022
Material sourcing	a. Description of the management risks associated with the use of critical materials (discussion & analysis)	a. Please refer to the section Responsible sourcing and Materials.
Business ethics	Description of policies and practices for prevention of: a. corruption and bribery and anti-competitive behavior (discussion & analysis) b. Total amount of monetary losses as a result of legal proceedings associated with bribery or corruption (reporting currency) c. Total amount of monetary losses as a result of legal proceedings associated with anti-competitive behavior regulations (reporting currency)	a. Please refer to the section in the ABB Sustainability Report 2022, Integrity & Transparency; - to the section in the ABB Integrated Report 2022 , Performance, Integrity & Transparency; - to the ABB Code of Conduct ; - to the ABB Supplier Code of Conduct ; - and to The Global ABB Integrity Program (December 2022) . b. Approximately $325 million USD for Kusile settlements. c. We are unable to disclose monetary values resulting from legal proceedings associated with anti-competitive behavior regulations.
Activity Metrics	a. Number of units produced (production should be disclosed as number of units produced by product category, where relevant product categories include energy generation, energy delivery, and lighting and indoor climate control electronics.) b. Number of employees	a. Please refer to the ABB Financial Report 2022 , in section "Analysis of results of operations". b. 106,850 (reflected in headcount)[1]

1 For the purpose of consistency, the number of employees is reflected in headcount in the Sustainability Report 2022.

EU Taxonomy: Disclosures for financial year 2022

EU Taxonomy: Background and objectives

At ABB, we are determined to shape our future in an environmentally sustainable way by investing in environmentally sustainable activities.

The pursuit of environmentally sustainable business is not only important to the public – it represents the paramount challenge of our times. To help address this challenge, the European Union (EU) has taken the lead in standardizing sustainability-related data and defining environmentally sustainable criteria and objectives.

As part of the European Green Deal, the EU aims to become climate-neutral and to reduce greenhouse gases generated within its borders to net zero by 2050. With the Action Plan on Financing Sustainable Growth, the European Commission intends to reorient the European economic and financial system towards more sustainable technologies and businesses.

The core of the action plan is found in the EU Taxonomy, which establishes a list of sustainable economic activities with the goal of identifying and scaling up green investments. This classification system defines "environmentally sustainable" business activities and translates the EU's climate and environmental objectives into criteria for specific economic activities. The EU Taxonomy aims to provide companies, investors and policymakers with appropriate definitions that specify under which circumstances economic activities can be considered environmentally sustainable. Furthermore, the EU Taxonomy seeks to inhibit "greenwashing" and to promote greater transparency regarding the true environmental sustainability of economic activities.

The Taxonomy regulation[8], the Climate Delegated Act including associated Annexes I and II[9], the Delegated Act supplementing Article 8[10] and the Complementary Climate Delegated Act[11], which regulate the disclosure obligations in accordance with Article 8 of the Taxonomy regulation, currently form the legal framework for the EU Taxonomy reporting. In addition, the Taxonomy FAQs and Notices published by the European Commission have been taken into consideration in our disclosures.

8 Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088.
9 Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852.
10 Commission Delegated Regulation (EU) 2021/2178 of 6 July 2021 supplementing Regulation (EU) 2020/852.
11 Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending (EU) 2021/2139 and (EU) 2021/2178 will apply from January 1, 2023, and includes specific nuclear and gas energy activities in the list of economic activities.

In accordance with the EU Taxonomy, an economic activity is "eligible" if it can potentially contribute to realizing at least one of the six environmental objectives[12] and is listed in relevant EU Taxonomy delegated acts, irrespective of whether that activity meets any or all of the technical screening criteria laid down.

Economic activities are not eligible for the Taxonomy when they are not specifically described in the Climate Delegated Act or other relevant delegated acts and when no technical screening criteria have been defined for them.

From January 1, 2022, the Taxonomy regulation requires corporate entities to disclose their environmentally sustainable activities. An eligible activity is only considered environmentally sustainable (i.e., "Taxonomy-aligned") if it meets the technical screening criteria (TSC):

- Makes a substantial contribution to one of the environmental objectives[13] by complying with the substantial contribution (SC) defined for the activity (e.g., level of carbon emissions)
- Meets "do no significant harm" (DNSH) criteria, having no negative effect on any of the other five environmental objectives (e.g., from the asset, process or product)
- Complies with the minimum safeguards (MS) related primarily to human rights and social and labor standards

For the **first year of reporting**, on financial year 2021, disclosures were limited to the proportions of Taxonomy-eligible and Taxonomy-non-eligible turnover, capital expenditure (Capex) and operating expenditure (Opex), as well as qualitative information.

The turnover KPI is intended to indicate current contributions to the environmental objectives, while the Capex KPI and the part of the Opex KPI related to research and development (R&D) are forward-looking investment measures.

For the **second year of reporting**, on financial year 2022, the disclosure requirements were expanded. In addition to the previous disclosures, companies must also disclose the proportions of "Taxonomy-aligned" turnover, Capex and Opex, along with supporting qualitative information.

12 Climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control and protection and restoration of biodiversity and ecosystems.

13 For the 2022 reporting period, only the two climate objectives must be covered, as the technical screening criteria for the remaining four environmental objectives are not yet available.

The following disclosures are prepared in line with the Taxonomy regulation Art. 8, and the related delegated acts. The Taxonomy regulation is a living legislation, dynamic in its development; the formulations and terms contained in these pieces of legislation are subject to uncertainty in interpretation and will require further clarification. Therefore, the following discussion relies on our own current interpretation; the principles applied for this year's reporting may not be applied in the same way in the future.

How ABB adopted the EU Taxonomy

Following the release of the Climate Delegated Act in June 2021, we conducted an analysis of our products, sites and activities and reviewed them against the economic activities defined by the Taxonomy in all the countries in which we operate. We involved the expertise of our product managers, real estate managers, sustainability managers, financial controllers, R&D controllers and environmental managers across all levels of our organization and solicited advice from external consultants. Through this procedure, relevant Taxonomy-eligible and -aligned activities were identified across the Group.

To assess eligibility, we reviewed the ABB Global product offering and mapped these to the economic activities defined by the Taxonomy. Most of our eligible products and services are considered "enabling activities" as defined by the Taxonomy.

To identify the relevant activities, we referred to the descriptions of the activities, the relevant Nomenclature of Economic Activities (NACE) codes and, if necessary, the substantial contribution criteria, thereby assessing whether an economic business activity carried out by ABB matches an activity description. Each ABB business division then broke down their offerings or economic activities to the level of granularity required to identify and meet the eligibility and alignment criteria.

ABB's real estate initiatives were mapped at the country level, and EU Taxonomy data collection and reporting was coordinated centrally. Investments were identified either centrally, at the business area or division level (e.g., large investments, such as business acquisitions), or at the country level (e.g., real estate) and then mapped to the relevant activity or allocated to activities based on the percentage of eligible and/or aligned revenue. Research and development activities were analyzed for the purpose of Taxonomy reporting under a twofold approach: (i) eligible and aligned R&D projects identified based on the product mapping, and (ii) other Opex allocated based on the percentage of eligible and aligned turnover[14] allocated projects.

The procedures were determined in consultation with ABB's Sustainability Board. The Sustainability Board and the Finance, Audit and Compliance Committee of the Board were kept informed of progress, possible risks and obstacles, as well as current developments.

14 The terms turnover and revenue are used interchangeably throughout this document.

Economic activities of ABB in the context of the EU Taxonomy

ABB's purpose is to enable a more sustainable and resource-efficient future through all our business activities. As a global technology leader, ABB is well-positioned in all our markets, and our businesses benefit from the key global trends of sustainability, digitalization, electrification and automation. ABB's strategy is deeply rooted in our purpose and is designed to accelerate profitable growth by capitalizing on key global trends.[15]

Our purpose is the cornerstone of ABB's direction and strategy. Through our technologies and responsible business practices, we aim to make our stakeholders and society more sustainable. We achieve this by addressing the world's energy challenges, transforming industries and embedding sustainability in all our activities and processes across our value chain.

Our purpose is based on five themes that capture the essence of what ABB stands for, what we aspire to, and how we make a permanent sustainable impact: creating success, leading with technology, addressing the world's energy challenges, transforming industries, and embedding sustainability. With these themes in mind, we enable a more sustainable and resource-efficient future with our technology leadership in electrification and automation.

Eligibility and substantial contribution assessments

Our activities in Electrification, Motion, Process Automation and Robotics & Discrete Automation business areas, together with our real estate activities, are partially eligible under the EU Taxonomy to contribute to the environmental objective of climate change mitigation.

The analysis of the economic activities in the context of the EU Taxonomy has not revealed any ABB activities that are eligible under the environmental objective of climate change adaptation; hence we believe that our main contribution is in climate change mitigation.

The table below presents the allocation of our activities to the economic activities listed in the EU Taxonomy under the environmental objective of climate change mitigation. Changes may be made to this list of economic activities in the future as the rules around the Taxonomy evolve.

15 For additional information, refer to the ABB Integrated Report 2022.

ABB Group Economic activities 2022 in accordance with the EU Taxonomy ("Taxonomy-eligible")
Environmental objective: climate change mitigation

Economic activity under the EU Taxonomy	Description of economic activity	Application to ABB Group business areas
3. Manufacturing		
3.1 Renewable energy technologies	Manufacture of renewable energy technologies, as renewable energy is defined in Article 2(1) of Directive (EU) 2018/2001	Electrification Motion Process Automation
3.2 Equipment for the production and use of hydrogen	Manufacture of equipment for the production and use of hydrogen	Motion Process Automation
3.3 Manufacture of low-carbon technologies for transport	Manufacture, repair, maintenance, retrofitting, repurposing and upgrading of low-carbon vehicles, rolling stock and vessels	Motion Process Automation
3.4 Manufacture of batteries	Manufacture of rechargeable batteries, battery packs and accumulators for transport, stationary and off-grid energy storage and other industrial applications Manufacture of respective components	Electrification
3.5 Energy efficiency equipment for buildings	Manufacture of energy efficiency equipment for buildings	Electrification Robotics & Discrete Automation
3.6 Manufacture of other low-carbon technologies	Manufacture of technologies aimed at substantial GHG emission reductions in other sectors of the economy, where those technologies are not covered by activities 3.1 to 3.5	Electrification Motion Process Automation
6. Transport		
6.5 Transport by motorbikes, passenger cars and light commercial vehicles	Purchase, financing, renting, leasing and operation of vehicles designated as category M1 (232), N1 (233), both falling under the scope of Regulation (EC) No 715/2007 of the European Parliament and of the Council (234), or L (2- and 3-wheel vehicles and quadricycles), as referred to in Article 4(1) of Regulation (EU) 2018/858	Electrification Motion Process Automation Robotics & Discrete Automation
6.12 Retrofitting of sea and coastal freight and passenger water transport	Retrofit and upgrade of vessels designed and equipped for the transport of freight or passengers on sea or coastal waters, and of vessels required for port operations and auxiliary activities, such as tugboats, mooring vessels, pilot vessels, salvage vessels and icebreakers	Process Automation

Economic activity under the EU Taxonomy	Description of economic activity	Application to ABB Group business areas
6.15 Infrastructure enabling low-carbon road transport and public transport	Construction, modernization, maintenance and operation of infrastructure that is required for zero tailpipe CO_2e operation of zero-emissions road transport, as well as infrastructure dedicated to transshipment and infrastructure required for operating urban transport	Electrification Process Automation
6.16 Infrastructure enabling low-carbon water transport	Construction, modernization, operation and maintenance of infrastructure that is required for zero tailpipe CO_2e operation of vessels or the port's own operations, as well as infrastructure dedicated to transshipment	Electrification Process Automation
7. Construction		
7.1 Construction of new buildings	Development of building projects for residential and non-residential buildings by bringing together financial, technical and physical means to realize the building projects for later sale as well as the construction of complete residential or non-residential buildings, on own account for sale or on a fee or contract basis	Electrification Process Automation Motion Robotics & Discrete Automation
7.2 Renovation of existing buildings	Construction and civil engineering works or preparation thereof	Electrification Process Automation Motion Robotics & Discrete Automation
7.3 Installation, maintenance and repair of energy efficiency equipment	Individual renovation measures consisting of installation, maintenance or repair of energy efficiency equipment	Electrification Motion Process Automation Robotics & Discrete Automation
7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	Installation, maintenance and repair of charging stations for electric vehicles in buildings and parking spaces attached to buildings	Electrification Motion Process Automation Robotics & Discrete Automation
7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	Electrification Motion Process Automation Robotics & Discrete Automation

Economic activity under the EU Taxonomy	Description of economic activity	Application to ABB Group business areas
7.6 Installation, maintenance, and repair of renewable energy technologies	Installation, maintenance and repair of renewable energy technologies, on site	Electrification Motion Process Automation Robotics & Discrete Automation
7.7 Acquisition and ownership of buildings	Buying real estate and exercising ownership of that real estate	Electrification Motion Process Automation Robotics & Discrete Automation
8. Information & Communication		
8.2 Data-driven solutions for GHG emissions reductions	Development or use of ICT solutions that are aimed at collecting, transmitting, storing data and at its modelling and use where those activities are predominantly aimed at the provision of data and analytics enabling GHG emission reductions; such ICT solutions may include, inter alia, the use of decentralized technologies (i.e., distributed ledger technologies), Internet of Things (IoT), 5G and artificial intelligence	Motion Process Automation
9. Professional, scientific and technical activities		
9.1 Close to market research, development and innovation	Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to the reduction, avoidance or removal of GHG emissions (RD&I) for which the ability to reduce, remove or avoid GHG emissions in the target economic activities has at least been demonstrated in a relevant environment, corresponding to at least Technology Readiness Level (TRL) 6	Electrification Process Automation Motion

ABB's activities were mapped following the ABB product tree by business area, division, product group, product line and industry usage. Financial data was extracted from various management reporting tools and reconciled to our consolidated figures at the division or product group level.

In 2022 we reassessed our 2021 eligible activity mapping, and activities were subjected to a series of screening tests to determine if they are Taxonomy-aligned. We completed the alignment assessment for our products, our real estate and R&D activities centrally at the business area and business division levels.

ABB makes substantial contributions to the following activities:

- 3.1 Manufacture of renewable energy technologies,
- 3.3 Manufacture of low-carbon technologies for transport,
- 3.4 Manufacture of batteries,
- 3.5 Manufacture of energy efficiency equipment for buildings,
- 6.15 Infrastructure enabling low-carbon road transport and public transport,
- 6.16 Infrastructure enabling low-carbon water transport,
- 7.3 Installation, maintenance and repair of energy efficiency equipment,
- 7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings,
- 7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings, and
- 7.6 Installation, maintenance and repair of renewable energy technologies.

The alignment criteria were assessed on an activity-by-activity or product-by-product basis using the technical screening criteria for the mapped activity.

Do no signifcant harm (DNSH)

The DNSH criteria were analyzed for economic activities where ABB meets the substantial contribution condition as listed above. ABB used a structured assessment to document its compliance with the DNSH criteria for the other five environmental objectives. Based on the DNSH criteria for the relevant economic activities, our assessment was carried out at the activity, company and site levels. For site-specific criteria, we focused our analysis on sites that produce products meeting the substantial contribution condition.
Below, we set out our interpretation and describe the main analyses conducted. The assessments confirm that we meet the requirements of the DNSH criteria.

1. **Climate change adaptation**
   We conducted a screening of the relevant physical climate risks and performed an initial climate risk and vulnerability assessment to identify which manufacturing sites may be affected by physical climate risks during their expected lifetimes. The climate risk and vulnerability analysis were based on Representative Concentration Pathway (RCP) scenarios 4.5 and 8.5 up to the year 2050. Furthermore, we assessed the relevance of identified climate risks on the economic activity and potential adaptation solutions that could reduce identified risks. At ABB, we are continuously aiming to improve our climate risk assessments.

2. **Sustainable use and protection of water and marine resources**[16]
   We assessed our activities for relevant sites regarding the sustainable use and protection of water and marine resources by measuring the fulfillment of requirements for water quality preservation, water stress avoidance and water impact assessment. Our sites within this scope are certified according to ISO 14001 Environmental Management Systems and ISO 9001 Quality Management Systems or provided other documentation which served as a basis for our assessment, supplemented by additional external data sources.
3. **Transition to a circular economy**
   To help preserve the Earth's resources for future generations, ABB takes a company-wide approach to circularity. By 2030, at least 80 percent of our products and solutions will be covered by our circularity approach and evaluated against a clear set of KPIs, corresponding to each stage of the product lifecycle. This internal circularity framework[17] serves as the basis of our assessment.
4. **Pollution prevention and control**
   The DNSH criteria require that the economic activity does not lead to the production, use or trade of chemical substances listed in a variety of EU chemical regulations and directives (e.g., EU Regulation 2019/1021 or 2017/852 or Annex XVII of EC 1907/2006, the REACH directive). We implemented a screening and monitoring process for hazardous substances[18] that aims to analyze the compliance of each in-scope site with the relevant EU regulations and directives.
5. **Protection and restoration of biodiversity and ecosystems**
   In order to verify adherence to the requirements for biodiversity and ecosystems, the relevant sites in or near biodiversity-sensitive or -protected areas were identified (e.g., using Natura 2000). Most of our sites within this scope are certified according to ISO 14001 Environmental Management Systems and ISO 9001 Quality Management Systems, which provided the basis for our assessment, supplemented by additional external data sources.

Minimum safeguards

The minimum safeguards are based on Article 18 of Regulation (EU) 2020/852 and drawn from principles expressed by the OECD, the UN, the Fundamental Conventions of the International Labour Organization and the International Bill of Human Rights.

16 For further information, refer to the "Water conservation" chapter in the ABB Sustainability Report 2022.
17 For further information, refer to the "Circularity approach" chapter in the ABB Sustainability Report 2022.
18 The ABB list of prohibited and restricted substances is available on our website.

ABB used a structured assessment to document its compliance with the minimum safeguards. The assessment considered the recommendations for the operationalization of the minimum safeguards as set forth in the Final Report on Minimum Safeguards from the EU Platform on Sustainable Finance (October 2022). Our assessment in 2022 was carried out separately for nine guiding principles: policies, due diligence and risk assessment, addressing impacts and tracking remediation effectiveness, communication, grievance mechanisms, consumer interests, anti-corruption, competition, and taxation.

For further information, please refer to the chapters on "Promoting social progress" and "Integrity and transparency" in the ABB Sustainability Report.

ABB financial and non-financial reporting

ABB prepares its consolidated financial statements in accordance with U.S. GAAP. The EU's Taxonomy regulation references the KPI disclosure in accordance with International Financial Reporting Standards (IFRS). For the accounting treatment of financial data required for the KPI disclosures, the two standards are largely converged, with the following exceptions:

- Non-order related research and development is expensed as incurred under U.S. GAAP and therefore has been reported as part of the Opex KPI and
- Leases with a term of one year or less are expensed as incurred under U.S. GAAP and not capitalized; therefore, these have also been reported as part of our Opex KPI.

The remaining differences between revenue recognition, tangible and intangible assets, and leases are largely converged, and no material differences impacting the comparability of data would be expected.

The results of our assessment of the Taxonomy eligibility and alignment of our offerings are summarized below. As our Taxonomy alignment is being reported for the first time, figures and comparable information from 2021 are not provided.

The method used to calculate the KPIs for year-end 2022 was based on financial data as available on December 31, 2022.

Taxonomy KPI disclosures

Turnover KPI

The proportion of Taxonomy-eligible and/or -aligned turnover has been calculated as the part of net turnover derived from products and services associated with Taxonomy-eligible and/or -aligned economic activities (numerator) divided by net turnover (denominator) for the financial year ended December 31, 2022.

The denominator is the Group's net turnover as presented in the Consolidated Income Statements under the line item "Total revenues," in accordance with U.S. GAAP. To calculate the numerator, we used the activity mapping described above and identified all third-party revenues associated with the Taxonomy-eligible and/or -aligned activities. For the year ended December 31, 2022, 37 percent of ABB revenues were Taxonomy-eligible, and 10 percent of ABB revenues were Taxonomy-aligned under the objective of climate change mitigation. In some instances, we disaggregated revenues by product as well as industry usage to identify the Taxonomy-eligible and -aligned turnover.

Large parts of ABB's business activities are not directly covered by the Taxonomy's activities, as the current version of the EU Taxonomy regulation is not directly aimed at our sector. Against this background, ABB is Taxonomy-aligned in the following activities:

- 3.1 Manufacture of renewable energy technologies,
- 3.3 Manufacture of low-carbon technologies for transport,
- 3.4 Manufacture of batteries,
- 3.5 Manufacture of energy efficiency equipment for buildings,
- 6.15 Infrastructure enabling low-carbon road transport and public transport,
- 6.16 Infrastructure enabling low-carbon water transport, and
- 7.6 Installation, maintenance and repair of renewable energy technologies.

The majority of our Taxonomy-eligible turnover is reported under Activity 3.6 "Manufacture of other low-carbon technologies." Activity 3.6 is of increasing importance and covers the manufacture of technologies aimed at substantial GHG emission reductions in other sectors of the economy. When assessing our eligibility under this activity, ABB has strictly filtered the product portfolio for products that directly aim to improve energy efficiency or reduce GHG emissions. These includes products such as energy-efficient motors, drives, turbochargers, measurement and analytics tools and energy-efficient electrical components.

The current "substantial contribution" condition for Activity 3.6 requires that the contribution to GHG emission reductions be measured using a life-cycle GHG emission savings calculation that demonstrates the savings compared to the best-performing alternative technology, product or solution available on the market. For many of our significant electrical and industrial automation solutions, it was unclear how to define the best-performing alternative on the market, as such products are not widely available. The technical screening criteria (TSC) need further clarification, as they do not allow for proper recognition of our electrical and industrial automation solutions.

The detailed proportion of turnover from products and services associated with Taxonomy-aligned economic activities is disclosed page 136 of the report.

Capital expenditure (Capex) KPI

The Capex KPI is defined as Taxonomy-eligible and/or -aligned Capex (numerator) divided by total Capex (denominator) for the financial year ended December 31, 2022. The total Capex used for the denominator includes total additions to tangible and intangible assets before depreciation, amortization and revaluations and impairments, as presented in Note 23 “Operating segment and geographic data” of the Consolidated Financial Statements, and from leases (finance and operating), as presented in Note 14 “Leases,” as well as assets acquired as part of business combinations, as presented in Note 4 “Acquisitions, divestments and equity-accounted companies.” Taxonomy-eligible and/or -aligned Capex used for the numerator includes Capex related to assets or processes that are associated with eligible or aligned activities, and Capex related to the purchase of output for eligible or aligned activities and measures. No “Capex plans” in line with the Taxonomy regulation were considered.

Within ABB, real estate initiatives and large investments are identified and mapped to the relevant activities at the business area and divisional levels. Capex KPI data collection is coordinated centrally. Investments have been reported under the activity with which the Capex is associated. Against this background, ABB is Taxonomy-aligned in the following activities:

- 3.1 Manufacture of renewable energy technologies,
- 3.3 Manufacture of low-carbon technologies for transport,
- 3.4 Manufacture of batteries,
- 3.5 Manufacture of energy efficiency equipment for buildings,
- 6.15 Infrastructure enabling low-carbon road transport and public transport,
- 6.16 Infrastructure enabling low-carbon water transport,
- 7.3 Installation, maintenance and repair of energy efficiency equipment,
- 7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings,
- 7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings, and
- 7.6 Installation, maintenance and repair of renewable energy technologies.

For the year ended December 31, 2022, 64 percent of ABB Capex are Taxonomy-eligible, and 14 percent of ABB Capex are Taxonomy-aligned under the objective of climate change mitigation.

Large investments were assessed and analyzed on a case-by-case basis and mapped to the relevant activity. ABB's real estate function assessed eligible investments in the construction and real estate sector for all activities from 7.1 to 7.7.[19] Under Activity 6.5 "Transport by motorbikes, passenger cars and light commercial vehicles," we have reported all eligible investments made in ABB's vehicle fleet.

Due to unavailability of data, for all remaining expenditures we allocated Capex according to a factor based on the percentage of eligible and aligned revenue per business division. For example, if 10 percent of the division's revenues were eligible, 10 percent of the remaining Capex not specifically mapped could be allocated to the activity associated with that revenue. By initially mapping large projects and subsequently allocating the remaining Capex, we ensured there was no double counting of Capex KPIs.

The detailed proportion of Capex from products and services associated with Taxonomy-aligned economic activities is disclosed page 138 of the report.

Operating expenditure (Opex) KPI

The Opex KPI is defined as Taxonomy-eligible and/or -aligned Opex (numerator) divided by total Opex (denominator) for the financial year ended December 31, 2022.

Total Opex used for the denominator consists of direct non-capitalized costs related to R&D, short-term leases (less than 1 year), repairs and maintenance, building renovation projects, and any other direct expenditures associated with the day-to-day servicing of assets including property, plants and equipment.

Direct costs for training and other human resource needs are not included in either the denominator or the numerator.

R&D is based on the line item "Non-Order related Research & Development" in the Consolidated Income Statements. Other corresponding values can be derived from our internal reporting systems but are not directly reconcilable with the figures presented in the Consolidated Income Statements.

19 7.1 Construction of new buildings, 7.2 Renovation of existing buildings, 7.3 Installation, maintenance and repair of energy efficiency equipment,7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings),7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings, 7.6 Installation, maintenance and repair of renewable energy technologies, 7.7 Acquisition and ownership of buildings

Against this background, ABB is Taxonomy-aligned in the following activities:

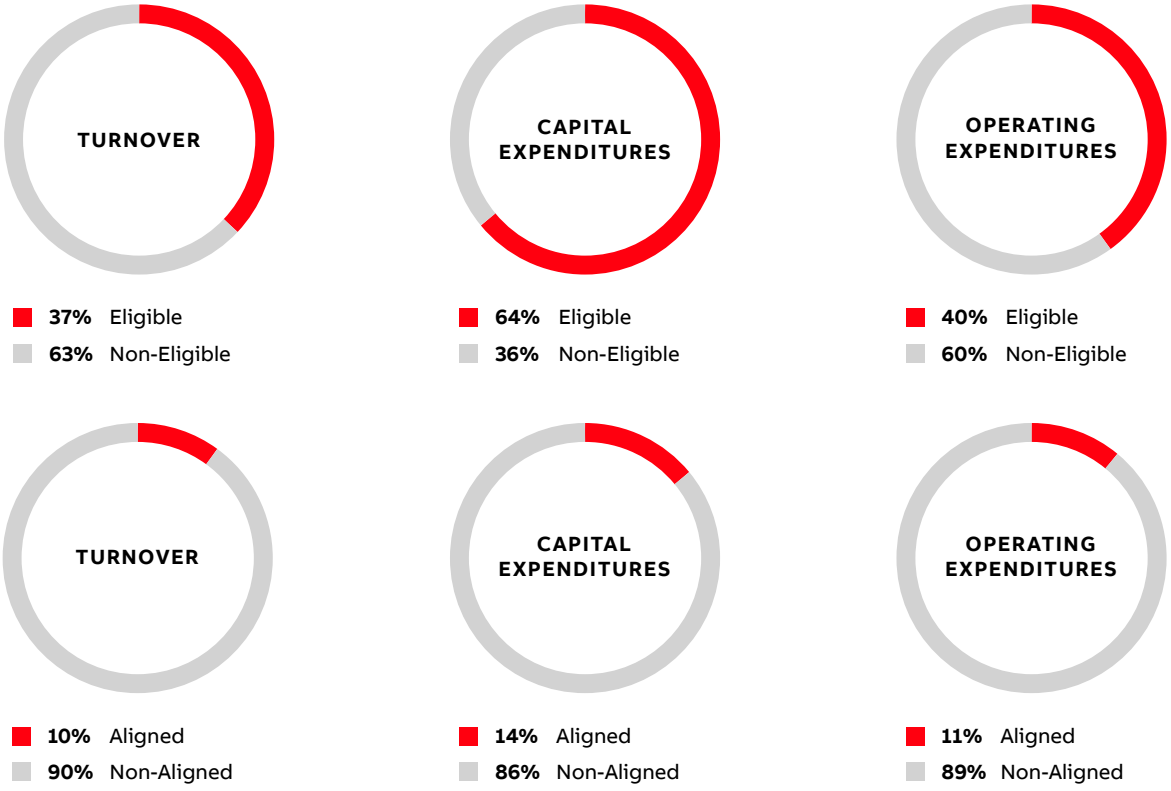
- 3.1 Manufacture of renewable energy technologies,
- 3.3 Manufacture of low-carbon technologies for transport,
- 3.4 Manufacture of batteries,
- 3.5 Manufacture of energy efficiency equipment for buildings,
- 6.15 Infrastructure enabling low-carbon road transport and public transport,
- 6.16 Infrastructure enabling low-carbon water transport, and
- 7.6 Installation, maintenance and repair of renewable energy technologies.

For the year ended December 31, 2022, 40 percent of Opex are Taxonomy-eligible and 11 percent of ABB's Opex are Taxonomy-aligned under the objective of climate change mitigation.

The Opex data aggregation was broken into two distinct processes. R&D was allocated to Taxonomy-eligible activities identified in the activity mapping phase described above. R&D managers working on projects not associated with Taxonomy-eligible activities but intended to substantially reduce GHG emissions assessed their eligibility using the criteria under Activity 9.1 "Close to market research, development and innovation" where appropriate. Allocation factors were applied to building renovation projects, maintenance and repair, and any other direct expenditures relating to the day-to-day servicing of real property assets, as well as short-term leases. These expenses were considered for each division and multiplied by the percentage of eligible and aligned revenue in that division. This approach was necessary due to a lack of more granular data on the same basis as described above for the Capex KPI. With this process, we ensured there was no double counting for Opex KPIs.

The detailed proportion of Opex from products and services associated with Taxonomy-aligned economic activities is disclosed page 140 of the report.

ABB assessment results under the EU Taxonomy: 2022 non-eligible, eligible, non-aligned and aligned KPIs



Next steps

At present, the EU has finalized the Climate Delegated Act, which details the technical screening criteria for activities that can make a substantial contribution to climate change mitigation and adaptation. The act focuses on economic activities in the sectors that are most relevant for climate neutrality and climate change adaptation, including energy, manufacturing, transport and buildings.

The EU is soon expected to publish a draft version of the Environmental Delegated Act. This act will address all the activities that can make a substantial contribution under the other four environmental objectives. In addition, the EU plans to release additional activities under the climate change mitigation objective, for which we will assess eligibility and alignment.

Upon release of the Environmental Delegated Act, we will implement a process similar to the above to assess our eligibility. In addition, we plan to implement the required processes and expertise to assess our compliance with the technical screening criteria (TSC) for the remaining four environmental objectives.

We intend to implement all the required processes for the financial year 2024, which is the expected period for mandatory compliance with the Corporate Sustainability Reporting Directive (CSRD) and the European Sustainability Reporting Standards

(ESRS). The CSRD and ESRS aim to standardize sustainability reporting and close the gap between financial and sustainability information, and the mandatory assurance for the ABB Groups sustainability reporting.

Recommendations and way forward

To be effective, the EU Taxonomy needs to take account of all economic activities that play an important role in the transition to net zero. As it stands, the Taxonomy focuses on sectors that are directly responsible for greenhouse gas emissions but takes less or no account of many critical technologies, such as electrical equipment and industrial automation, that are needed to enable a renewable energy system.

The EU Taxonomy also fails to consider the management of electricity consumption, which could be substantially reduced in a short timeframe through the deployment of readily available and cost-effective technologies. For example, upgrading an electric motor to a higher efficiency standard can deliver significant energy savings that recoup the cost of the motor in lower energy bills. The same applies to industrial automation, which in the process industries can deliver energy savings of up to 25 percent.

In summary, we view the EU Taxonomy as a significant step forward in developing a common classification system for sustainable economic activities. However, it should be expanded to include activities and sectors that contribute indirectly, but still significantly, to a low-carbon society – a shortcoming that the EU has acknowledged. ABB recommends and is prepared to support greater private-sector involvement in determining which activities and sectors should be covered.

Climate change is a global challenge that requires a global approach. The end goal should be a common global classification system for sustainable activities that is comprehensive, credible and relevant to the entire world. If the gaps and shortcomings in the EU Taxonomy are addressed, we believe that it has the potential to serve as a model for such a system, as well as an important driver of investment in sustainable development.

EU Taxonomy results

Turnover

Economic activities	Code(s)	Absolute turnover Musd	Proportion of turnover %	Substantial contribution criteria: Climate change mitigation %	DNSH criteria: Climate change mitigation Y/N	DNSH criteria: Climate change adaptation Y/N	DNSH criteria: Water and marine resources Y/N	DNSH criteria: Circular economy Y/N	DNSH criteria: Pollution Y/N	DNSH criteria: Biodiversity and ecosystems Y/N	Minimum safeguards Y/N	Taxonomy-aligned proportion of turnover year N %	Category (enabling activity) E
A. TAXONOMY-ELIGIBLE ACTIVITIES													
A.1. Environmentally sustainable activities (Taxonomy-aligned)													
3.1 Manufacture of renewable energy technologies	3.1	1,259	4%	100%	N/A	Y	Y	Y	Y	Y	Y	4%	E
3.3 Manufacture of low-carbon technologies for transport	3.3	480	2%	100%	N/A	Y	Y	Y	Y	Y	Y	2%	E
3.4 Manufacture of batteries	3.4	26	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E
3.5 Manufacture of energy efficiency equipment for buildings	3.5	406	1%	100%	N/A	Y	Y	Y	Y	Y	Y	1%	E
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	627	2%	100%	N/A	Y	Y	Y	Y	Y	Y	2%	E
6.16 Infrastructure enabling low-carbon water transport	6.16	186	1%	100%	N/A	Y	Y	Y	Y	Y	Y	1%	E
7.6 Installation, maintenance and repair of renewable energy technologies	7.6	19	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E
Turnover of enivironmental sustainable activities (Taxonomy-aligned activities) (A.1)		**3,003**	**10%**	**100%**	**N/A**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**10%**	
A.2. Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)													
3.2 Equipment for the production and use of hydrogen	3.2	29	0%										
3.3 Manufacture of low-carbon technologies for transport	3.3	761	3%										
3.6 Manufacture of other low-carbon technologies	3.6	6,952	24%										
6.12 Retrofitting of sea and coastal freight and passenger water transport	6.12	23	0%										
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	16	0%										

				Substantial contribution criteria	DNSH criteria								
Economic activities	Code(s)	Absolute turnover Musd	Proportion of turnover %	Climate change mitigation %	Climate change mitigation Y/N	Climate change adaptation Y/N	Water and marine resources Y/N	Circular economy Y/N	Pollution Y/N	Biodiversity and ecosystems Y/N	Minimum safeguards Y/N	Taxonomy-aligned proportion of turnover year N %	Category (enabling activity) E
6.16 Infrastructure enabling low-carbon water transport	6.16	23	0%										
7.6 Installation, maintenance and repair of renewable energy technologies	7.6	20	0%										
8.2 Data-driven solutions for GHG emissions reductions	8.2	109	0%										
Turnover of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		**7,933**	**27%**										
Total (A.1+A.2)		**10,936**	**37%**										
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES													
Turnover of Taxonomy-non-eligible activities (B)		**18,510**	**63%**										
Total (A+B)		**29,446**	**100%**										

Capital expenditure (Capex) KPI

				Substantial contribution criteria	DNSH criteria									
Economic activities	Code(s)	Absolute CapEx Musd	Proportion of CapEx %	Climate change mitigation %	Climate change mitigation Y/N	Climate change adaptation Y/N	Water and marine resources Y/N	Circular economy Y/N	Pollution Y/N	Biodiversity and ecosystems Y/N	Minimum safeguards Y/N	Taxonomy-aligned proportion of CapEx year N %	Category (enabling activity) E	Category (transitional activity) T
A. TAXONOMY-ELIGIBLE ACTIVITIES														
A.1. Environmentally sustainable activities (Taxonomy-aligned)														
3.1 Manufacture of renewable energy technologies	3.1	4	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E	
3.3 Manufacture of low-carbon technologies for transport	3.3	12	1%	100%	N/A	Y	Y	Y	Y	Y	Y	1%	E	
3.5 Manufacture of energy efficiency equipment for buildings	3.5	1	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E	
6.5 Transport by motorbikes, passenger cars and light commercial vehicles	6.5	25	2%	100%	N/A	Y	Y	Y	Y	Y	Y	2%		T
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	137	10%	100%	N/A	Y	Y	Y	Y	Y	Y	10%	E	
7.3 Installation, maintenance and repair of energy efficiency equipment	7.3	1	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E	
CapEx of enivironmental sustainable activities (Taxonomy-aligned activities) (A.1)		**180**	**14%**	**100%**	**N/A**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**14%**		
A.2. Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)														
3.1 Manufacture of renewable energy technologies	3.1	22	2%											
3.3 Manufacture of low-carbon technologies for transport	3.3	32	2%											
3.5 Manufacture of energy efficiency equipment for buildings	3.5	11	1%											
3.6 Manufacture of other low-carbon technologies	3.6	122	9%											
6.5 Transport by motorbikes, passenger cars and light commercial vehicles	6.5	22	2%											
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	3	0%											

				Substantial contribution criteria	DNSH criteria									
Economic activities	**Code(s)**	**Absolute CapEx** Musd	**Proportion of CapEx** %	**Climate change mitigation** %	**Climate change mitigation** Y/N	**Climate change adaptation** Y/N	**Water and marine resources** Y/N	**Circular economy** Y/N	**Pollution** Y/N	**Biodiversity and ecosystems** Y/N	**Minimum safeguards** Y/N	**Taxonomy-aligned proportion of CapEx year N** %	**Category (enabling activity)** E	**Category (transitional activity)** T
6.16 Infrastructure enabling low-carbon water transport	6.16	2	0%											
7.1 Construction of new buildings	7.1	97	7%											
7.2 Renovation of Existing Buildings	7.2	17	1%											
7.3 Installation, maintenance and repair of energy efficiency equipment	7.3	14	1%											
7.4 Installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings)	7.4	1	0%											
7.5 Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	7.5	2	0%											
7.6 Installation, maintenance and repair of renewable energy technologies	7.6	4	0%											
7.7 Acquisition and ownership of buildings	7.7	307	23%											
8.2 Data-driven solutions for GHG emissions reductions	8.2	1	0%											
CapEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		**657**	**50%**											
Total (A.1+A.2)		**837**	**64%**											
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES														
CapEx of Taxonomy-non-eligible activities (B)		**471**	**36%**											
Total (A+B)		**1,308**	**100%**											

Operating expenditure (Opex) KPI

Economic activities	Code(s)	Absolute OpEx Musd	Proportion of OpEx %	Substantial contribution criteria: Climate change mitigation %	DNSH criteria: Climate change mitigation Y/N	DNSH criteria: Climate change adaptation Y/N	DNSH criteria: Water and marine resources Y/N	DNSH criteria: Circular economy Y/N	DNSH criteria: Pollution Y/N	DNSH criteria: Biodiversity and ecosystems Y/N	Minimum safeguards Y/N	Taxonomy-aligned proportion of OpEx year N %	Category (enabling activity) E
A. TAXONOMY-ELIGIBLE ACTIVITIES													
A.1. Environmentally sustainable activities (Taxonomy-aligned)													
3.1 Manufacture of renewable energy technologies	3.1	66	4%	100%	N/A	Y	Y	Y	Y	Y	Y	4%	E
3.3 Manufacture of low-carbon technologies for transport	3.3	7	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E
3.5 Manufacture of energy efficiency equipment for buildings	3.5	32	2%	100%	N/A	Y	Y	Y	Y	Y	Y	2%	E
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	81	5%	100%	N/A	Y	Y	Y	Y	Y	Y	5%	E
6.16 Infrastructure enabling low-carbon water transport	6.16	2	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E
7.6 Installation, maintenance and repair of renewable energy technologies	7.6	3	0%	100%	N/A	Y	Y	Y	Y	Y	Y	0%	E
OpEx of enivironmental sustainable activities (Taxonomy-aligned activities) (A.1)		**191**	**11%**	**100%**	**N/A**	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**11%**	
A.2. Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities)													
3.1 Manufacture of renewable energy technologies	3.1	7	0%										
3.2 Equipment for the production and use of hydrogen	3.2	2	0%										
3.3 Manufacture of low carbon technologies for transport	3.3	35	2%										
3.5 Manufacture of energy efficiency equipment for buildings	3.5	14	1%										
3.6 Manufacture of other low-carbon technologies	3.6	380	22%										
6.12 Retrofitting of sea and coastal freight and passenger water transport	6.12	3	0%										
6.15 Infrastructure enabling low-carbon road transport and public transport	6.15	11	1%										
6.16 Infrastructure enabling low-carbon water transport	6.16	3	0%										
8.2 Data-driven solutions for GHG emissions reductions	8.2	13	1%										
9.1 Close to market research, development and innovation	9.1	17	1%										

				Substantial contribution criteria	DNSH criteria								
Economic activities	Code(s)	Absolute OpEx Musd	Proportion of OpEx %	Climate change mitigation %	Climate change mitigation Y/N	Climate change adaptation Y/N	Water and marine resources Y/N	Circular economy Y/N	Pollution Y/N	Biodiversity and ecosystems Y/N	Minimum safeguards Y/N	Taxonomy-aligned proportion of OpEx year N %	Category (enabling activity) E
OpEx of Taxonomy-eligible but not environmentally sustainable activities (not Taxonomy-aligned activities) (A.2)		485	29%										
Total (A.1+A.2)		676	40%										
B. TAXONOMY-NON-ELIGIBLE ACTIVITIES													
OpEx of Taxonomy-non-eligible activities (B)		1,020	60%										
Total (A+B)		1,696	100%										

Definitions

Greenhouse gas emissions

GHG emissions refer to all emissions that have a warming effect on the earth's surface by trapping heat in the atmosphere. Carbon dioxide (CO_2) makes up the vast majority of GHG emissions, but other gases, including methane (CH_4), nitrous oxide (N_2O) and sulfur hexafluoride (SF_6), also have a warming effect. CO_2, methane and nitrous oxide are released during the combustion of fossil fuels, such as coal, oil and natural gas, to produce energy. At ABB, we use the metric of CO_2-equivalent (CO_2e) to calculate our GHG emissions and to measure progress toward our emissions reduction targets.

Scope 1 GHG emissions

Direct emissions from company-owned and controlled resources, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.

Scope 2 GHG emissions

Indirect emissions from the generation of purchased energy (electricity, steam, heat, cooling) from a utility provider.

Scope 3 GHG emissions

All other indirect emissions not included in scope 2 that occur in the value chain, both upstream and downstream. According to the GHG protocol, scope 3 emissions are separated into 15 categories and include, for example, purchased goods and services, business travel and commuting, and use of sold products.

Caution concerning forward-looking statements

The ABB Sustainability Report 2022 includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. We have based these forward-looking statements largely on current expectations, estimates and projections about the factors that may affect our future performance, including global economic conditions as well as the economic conditions of the regions and the industries that are major markets for ABB. The words “believe,” “may,” “will,” “estimate,” “continue,” “target,” “anticipate,” “intend,” “expect”, “plan” and similar words and the express or implied discussion of strategy, plans or intentions are intended to identify forward-looking statements. These forward- looking statements are subject to risks, uncertainties and assumptions, including among other things, the following: (i) business risks related to the global volatile economic environment; (ii) costs associated with compliance activities; (iii) difficulties encountered in operating in emerging markets; (iv) risks inherent in large, long term projects served by parts of our business; (v) the timely development of new products, technologies, and services that are useful for our customers; (vi) our ability to anticipate and react to technological change and evolving industry standards in the markets in which we operate; (vii) changes in interest rates and fluctuations in currency exchange rates; (viii) changes in raw materials prices or limitations of supplies of raw materials; (ix) the weakening or unavailability of our intellectual property rights; (x) industry consolidation resulting in more powerful competitors and fewer customers; (xi) effects of competition and changes in economic and market conditions in the product markets and geographic areas in which we operate; (xii) effects of, and changes in, laws, regulations, governmental policies, taxation, or accounting standards and practices and (xiii) other factors described in documents that we may furnish from time to time with the US Securities and Exchange Commission, including our Annual Reports on Form 20-F. Although we believe that the expectations reflected in any such forward-looking statements are based on reasonable assumptions, we can give no assurance that they will be achieved. We undertake no obligation to update publicly or revise any forward-looking statements because of new information, future events or otherwise. In light of these risks and uncertainties, the forward-looking information, events and circumstances might not occur. Our actual results and performance could differ substantially from those anticipated in our forward-looking statements.

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