

IBM and Good Tech: Modeling responsible stewardship in the digital age

Arvind's letter

Over its 109-year history, IBM has helped the world weather many storms. That history gives us confidence that we will help society to navigate these challenging times and emerge from them stronger.



Arvind Krishna
Chief Executive Officer
IBM

As we fight one pandemic of global disease, we cannot lose sight of the fact that another pandemic of racial injustice is deeply afflicting our communities. We have a responsibility to confront the dangers and inequalities exposed by these threats. As reflected in this report, IBM has taken wide-ranging actions to support and strengthen all of those impacted by these unprecedented events. As in the past, we will continue to lead with the core values that have guided us through decades of deep societal change.

As the digital transformation of business and society accelerates, IBM will continue to advance our century-long commitment to diversity and inclusion. We have long embraced a corporate philosophy that is inclusive of all our stakeholders – from our customers, employees, suppliers and shareholders, to our communities and the world around us. And we will continue to lead with modern approaches to skills, education and training programs that broaden economic opportunity.

We are also building technology platforms designed to make organizations and their operations more resilient, efficient and sustainable for people and the planet. We know that in order to be successful, technologies must be not only effective, but trustworthy. IBM's long-standing commitment to good tech reflects our company's most deeply held values as well as our pledge to put responsible stewardship in the digital age at the core of our business strategy. Trust will only become more important as we help organizations derive new insights from their data through technologies like artificial intelligence, hybrid cloud, blockchain and quantum computing.

In the pages that follow, we report on the actions we're taking that reflect our promise to lead the industry in this new era of technology:

- **IBM has long recognized that diversity and inclusion are core to our culture and business.** In 2019, we achieved record diversity across all underrepresented groups, and best-in-class inclusion scores, with 87% of IBMers saying they can be their authentic selves at work. While we've made progress, we have more work to do. In this new era, we will take new, bold steps to ensure equity at all levels of IBM, in tech, and in our communities.

- **IBM has continued to invest in skills and re-skilling to make the digital era more inclusive.** IBM's apprenticeship program enrollment grew twice as fast as expected, becoming a nationwide model in the United States. Meanwhile, P-TECH – the pioneering high-school, career-readiness education model led by IBM – grew to more than 220 schools serving 150,000 students in 24 countries, with more than 600 industry partners and 200 community colleges.
- **IBM has upheld our ethical imperative to prepare society for the changes emerging technologies may bring.** We launched the IBM Policy Lab, a forum to provide lawmakers with actionable recommendations to harness the benefits of innovation while ensuring trust in a world being reshaped by data. We're especially proud that the Ethisphere Institute named IBM as one of the world's most ethical companies in 2019 for the second year in a row.
- **IBM has worked to improve the efficiency of our operations and protect our environment for future generations.** In 2019 IBM substantially increased its use of renewable electricity, which now accounts for 47% of the company's total electricity consumption. We also became a founding member of the Climate Leadership Council and are supporting its ambitious plan for a carbon tax, the proceeds of which would be returned to citizens as a "carbon dividend."

As I begin my tenure as IBM's tenth CEO, I look forward to leading my fellow IBMers in building upon our legacy of good tech and responsible stewardship for the benefit of our company, our clients and the world.

Arvind Krishna

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Chief Executive Officer
IBM

Emb(race)

IBM and IBMers stand with the Black community and call for change to ensure racial equality.



Policy advocacy

In June 2020, IBM joined [Georgia businesses](#) in support of hate crimes legislation, and our CEO sent a [letter](#) to the U.S. Congress proposing specific changes to public policies — the first steps in an aggressive push to combat systemic racism. IBM called on Congress to address police reform and accountability, responsible use of technology, and equal opportunity for skills and jobs.

IBM also began matching contributions by IBM employees and retirees 1-to-1, through July 20, to four charities engaged in anti-discrimination initiatives: the National Urban League, the NAACP Legal Defense and Education Fund, the Leadership Conference Education Fund, and the Black Lives Matter Network.



Responsible use of technology

IBM firmly opposes uses of any technology for mass surveillance, racial profiling, violations of basic human rights and freedoms, or any purpose inconsistent with IBM's values and Principles of Trust and Transparency. IBM has announced the sunset of our general-purpose facial recognition software, and we believe it's time for a national dialogue on whether and how this technology should be used by domestic law enforcement. Regarding AI systems, vendors and users share a responsibility to ensure that AI is tested for bias, particularly when used in law enforcement, and that such testing is audited and reported. National policy should also advance uses of technologies, such as body cameras and data analytics, that bring greater transparency and accountability to policing.



Expanding opportunity

P-TECH has grown to 220 schools worldwide, with a heavy focus on students of color in educationally underserved areas in the United States. This is creating real opportunities and jobs for young people, and IBM continues to expand P-TECH worldwide. Our apprenticeship program is another new avenue for entering the IT field. Participants take IBM classes and are mentored by IBMers, and since 2017 more than 500 have been trained and hired. Pell Grants help many U.S. students of color go to college, but virtually no federal funds are available for non-college skills training or job certification programs. IBM believes Pell Grant eligibility should be expanded — including for incarcerated persons — so more students can build relevant skills.

IBM responds to a global pandemic

IBM has shared resources, formed alliances and deployed solutions to help meet the complex, urgent challenges of COVID-19. You can find more detail on these initiatives and others at ibm.com/impact/covid-19.



Supercomputing consortium

We led an effort with the U.S. government, industry, and academic leaders to provide free access to supercomputing capacity in support of COVID-19 research.



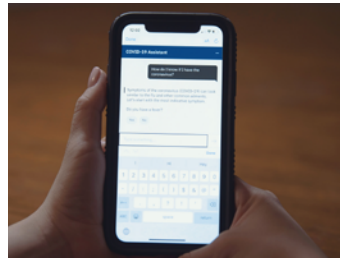
Call for Code

The initiative's 2020 global challenge asks developers to devise solutions, using open source technology in the cloud, that can help communities respond.



Access to IBM patents

We granted free access to IBM's portfolio of 80,000-plus patents to those developing technologies to help diagnose, prevent, contain or treat coronaviruses.



IBM Watson® Assistant

We trained Watson Assistant to deliver fast, accurate COVID-19 answers for customers, employees and citizens — and offered it to organizations free for at least 90 days.



World Community Grid®

Scripps Research scientists are using computing power donated by individuals worldwide to run molecular modeling simulations, searching for potential treatments.



Remote learning resources

With schools closed for nearly a billion children, we shared our experience, tools and resources to help educators and parents keep kids engaged with remote learning.



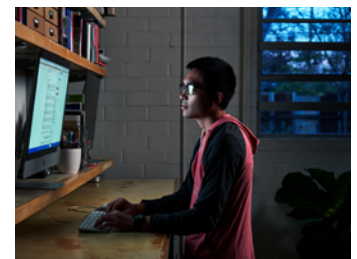
MIT-IBM Watson AI Lab

The lab is funding projects that use AI to target immediate public health and economic challenges, and designed to improve how we evaluate and respond to future risks.



Deep search service

IBM Research® provided a free, cloud-based AI service that lets scientists and academics query thousands of peer-reviewed papers and licensed databases for COVID-19 knowledge.



Medical literature navigator

IBM Watson Insights for Medical Literature COVID-19 Navigator, a cloud and AI semantic search tool, lets anyone explore thousands of historical and recent articles.

Our approach

At IBM we not only solve business problems, but also “put smart to work for good,” delivering our best technology and talent at scale in an ethical fashion to positively impact individuals, communities and the world. That’s what **#GoodTechIBM** means.

To enable deep social impact at scale, we apply the same principles that we use to drive our business:

- **User-centricity** – Putting the user at the forefront of all initiatives. Focusing on user outcomes drives business by helping users achieve their goals.
- **Cocreation** – Working jointly with partners and IBMers to design, prove and launch innovative programs. No individual can accomplish what diverse, empowered groups can do together.
- **Agile** – Using modernized ways of working to foster rapid iteration and flexibility. Cross-functional Agile teams lead to better outcomes for users.

The full details about these principles and how IBM is reinventing CSR for the digital economy can be found in our latest [white paper](#).

The ESG stakeholder engagement team works cross-functionally to engage around and report on ESG issues important to our stakeholders.

Partnerships, collaborations and engagements with all of our stakeholders continue to be critical components of our strategy and enable us to overcome societal challenges that are too big for any single public entity or industry sector to manage. Below is a small sample of our collaborations over the past year.

- In August 2019, IBM and 180 other companies signed The Business Roundtable’s new Statement on the Purpose of a Corporation. IBM pledged as a company to support all its stakeholders, including customers, employees, suppliers, communities and shareholders.
- [P-TECH](#) is the groundbreaking education model IBM created in 2011 with the New York City Department of Education and The City University of New York, to help provide young people the skills and credentials needed for 21st century jobs. In 2019, P-TECH doubled the number of participating schools to 220, in 24 countries, with a pipeline of 150,000 students, and 600

industry partners.

- IBM is a founding member of the Responsible Business Alliance (RBA), a nonprofit industry group that enables companies to support continuous improvement in the social, environmental and ethical responsibility of their supply chains. IBM requires its direct suppliers of goods and services to adhere to the RBA Code of Conduct, which contains provisions for labor, health and safety, environment, ethics and management systems.
- In 2019, IBM became a founding member of the Climate Leadership Council and publicly supported the council’s plan for a carbon tax, with the proceeds of that tax – a “carbon dividend” – to be returned to citizens.
- IBM collaborated with The Nature Conservancy as part of [Forecast: Change](#), an effort led by The Weather Company, an IBM Business, to raise awareness about and address global water challenges. As part of that 2019 initiative, the IBM Service Corps delivered a technical roadmap for the development of an open data platform for the The Nature Conservancy’s water initiatives.
- Launched by IBM in July 2019, [SkillsBuild®](#) combines online learning with community college and NGO partnerships to provide access to IBM offerings, education and projects to help professionals build the skills they need for new collar roles. The platform has over 22 partners and is available across nine countries.
- [Traffik Analysis Hub](#) involves partnerships with financial institutions and NGOs to combat human trafficking. IBM AI and IBM Cloud® allow partners to upload and analyze complex sensitive data, and our cognitive technology enables analysts to identify trafficking patterns, networks and hotspots. The platform, launched in late 2019, has over 93,000 users.



Operating with trust and transparency

Trust and transparency have always been essential to IBM's success.

Today, we consider the impact of our technology on society and accept the responsibility that our digital era demands of innovators. We seek not merely to comply but to lead on the urgent issues of data privacy, ethical AI, inclusiveness in technology design, and more.

Enterprise-wide data security

Cybersecurity is a critical part of IBM's risk management. IBM has a dedicated Chief Information Security Officer, whose team is responsible for leading enterprise-wide information security strategy, policy, standards, architecture and processes. The CISO is part of IBM's Enterprise and Technology Security group, which works across the entire organization to protect IBM, its brand and its clients against cybersecurity risks.

Cybersecurity oversight

The IBM Board and the Audit Committee each receive regular updates from senior management, including the CISO and leaders from IBM's Enterprise and Technology Security organization, as well as from other cybersecurity experts.

From an enterprise perspective, IBM implements a multifaceted risk-management approach to identify and address cybersecurity risks. IBM has policies and procedures that provide the foundation upon which the company's infrastructure and data are managed. IBM performs ongoing assessments regarding its technical controls and its methods for identifying emerging risks related to cybersecurity.

IBM uses a layered approach, with overlapping controls to defend against cybersecurity attacks and threats on networks, end-user devices, servers, applications, data, and cloud solutions. IBM has a security monitoring program and a global incident response process to respond to cybersecurity threats and attacks. IBM also utilizes a combination of online training, educational tools, videos and other awareness initiatives to foster a culture of security awareness and responsibility among its workforce.

Policies and practices

IBM maintains extensive corporate directives authorizing and requiring information security activities, including the creation and implementation of standards, processes and procedures. These directives and other corporate policies are reviewed and approved annually by the IBM CISO.

IBM has an enterprise IT security policy and a number of standards to help ensure IT assets are protected. These are developed based

on various industry best practices, including but not limited to the National Institute of Standards and Technology (NIST) and the International Organization for Standardization (ISO). They are tested and certified regularly through a combination of frameworks and assessment activities including Service Organization Control 1, SOC 2, Sarbanes-Oxley Act, Federal Risk and Authorization Management Program, Health Insurance Portability and Accountability Act (HIPAA), and others. IBM also undergoes numerous internal and external audits. Self-assessments are an ongoing activity for each team and are built into their agile delivery methods.

IBM has implemented a set of practices designed to embed security and privacy into the design of our products and services. "Security and Privacy by Design@IBM" provides a streamlined, agile process for all IBM business units to assess threats, test protections, and verify that security requirements are met.

IBM has an enterprise-level data incident response process that applies to all operations worldwide and provides direction for identifying and handling data incidents involving IBM data. IBM reviews and, if appropriate, revises its policies and practices as we identify emerging issues.

Ethics and integrity leadership

Creating and maintaining a sustained culture of ethics and integrity has long been part of IBM's DNA. It starts with our employees and leaders, and extends to our business partners and suppliers. We teach, listen and collaborate as we continue to transform and enhance our internal compliance, education and integrity programs.

Teach

IBM achieved 100% participation in its annual Business Conduct Guidelines program in 2019. Each year, employees worldwide certify to our BCG policy, currently available in 26 languages, and complete the BCG course. The course includes an introduction from our Chairman, emphasizing the importance of integrity to IBM and presenting a number of interesting scenarios depicting integrity dilemmas that employees may face while conducting IBM's business.

In addition to the yearly BCG training for all IBMers, IBM Trust and Compliance conducts extensive in-person training each year. In 2019, IBM's Trust and Compliance officers, lawyers and management provided in-person compliance and ethics training to nearly 33,000 IBMers around the world on topics including public procurement, business amenities, anti-corruption, ethics, and fraud prevention.

Trust and Compliance also deploys targeted online integrity training to various IBM populations. For example, employees facing new challenges at turning points in their careers — when new to IBM, new to management or new to emerging markets — are required to take targeted integrity training. Tens of thousands of IBMers take these additional online modules each year.

Also in 2019, IBM senior business leaders sponsored integrity summits in 28 countries, in both emerging and major markets. Managed and run by local senior leadership, these summits emphasized the role of leaders in creating an ethical culture and focused on key compliance risks in each region, along with specific actions that can be taken to mitigate these risks.

Listen

For more than 50 years, IBM has maintained an internal "speak up" reporting channel for employees, as well as channels for suppliers, business partners and others to report concerns or suspected violations of our BCGs, or unethical or unlawful behavior within the company. These channels support anonymous reporting.

More than 28,000 IBMers participated in our annual Global Integrity Survey in 2019, providing valuable feedback on their perception of ethics and integrity within the organization. Since 2010, we have used these insights to enhance our global ethics and integrity programs.

Collaborate

IBM's commitment to ethics and integrity leadership extends to employees of IBM Business Partners and our suppliers, as part of their partnership commitment to IBM. In 2019, IBM provided online ethics and integrity education to nearly 32,000 representatives from IBM Business Partners and suppliers around the world. IBM Business Partner and supplier personnel have also attended over 100 in-person training sessions in connection with our integrity summits. For the seventh year in a row, IBM's Chief Trust and Compliance Officer emphasized the value of ethics and integrity in an annual address at our Global Business Partner Leadership Conference (PartnerWorld®).

Key policy positions

Experience has taught IBM that engagement — reaching out, listening and having authentic dialogue — is the best path to good outcomes. We strive to offer every government leader with whom we engage innovative ideas to address national challenges. However, IBM does not espouse a partisan or political point of view.



Awards and recognition

World's Most Ethical Companies

The Ethisphere Institute again included IBM on its 2020 list of 132 companies “setting the global standards of business integrity and corporate citizenship.”

Best Shareholder Engagement

Corporate Secretary magazine presented IBM its 2019 Corporate Governance award for Best Shareholder Engagement.

Alone among our major competitors, we do not make political contributions and do not endorse candidates for office — and we never have. IBM does not have a Political Action Committee, and does not engage in independent or electioneering communications as defined by law.

But if IBM doesn't have politics, it does have values. IBMers believe in helping clients succeed, in innovation that matters to the world, and in relationships based on trust and personal responsibility. And we have always led the world of business in diversity, inclusion and tolerance. These values and legacy lead IBM to take definitive positions on a range of public policies and proposals.

In that spirit of engagement, we established the [IBM Policy Lab](#) in 2020. The forum provides policymakers with a vision and actionable recommendations to harness the benefits of innovation while ensuring trust in a world being reshaped by data. As businesses and governments deploy technologies that are positively transforming our world, we work collaboratively on public policies to meet the challenges of tomorrow.

IBM is committed to meaningful management, oversight and accurate reporting with respect to our public policy engagement, including with respect to our trade associations. More information about our public policy governance and public reporting is available on our public policy expenditures [website](#).

We are proud of the consistently high ratings we have received from independent analysts who examine corporate practices on lobbying and political spending, including the Center for Political Accountability and Transparency International UK.

Policy positions 2019-20

IBM is committed to leading on public policy issues that are relevant to IBM and the world. An overview of IBM's key policy positions is available on our key policy issues [website](#). The following are selected policies and proposals on which IBM has taken a position in 2019 and 2020:

Precision regulation of AI

IBM supports targeted policies that would increase the responsibilities for companies to develop and operate trustworthy AI. One-size-fits-all rules won't properly accommodate the characteristics of every industry making use of AI and its impact on individuals, but we can define an appropriate risk-based AI governance policy framework based on three pillars: accountability, transparency and fairness. Learn more at [IBM Policy Lab](#).

U.S. national privacy law

IBM has called for a precision regulation approach to addressing Americans' privacy concerns and has actively encouraged the U.S. Congress and governments worldwide to make privacy protections a priority. In the absence of a national standard, U.S. states are stepping in to protect citizens' privacy. However, it's important to provide a consistent national standard, flexible enough to implement while driving accountability. One significant step in this direction is the National Institute of Standards and Technology's [Version 1.0 Privacy Framework](#), released in January 2020 and which IBM strongly supports. Learn more at [THINKPolicy](#).

U.S. Higher Education Act reform

There is more than one pathway to a good career in the United States, but the Higher Education Act in its current form does not reflect that. It's time we modernize HEA to help federal student aid work better for all Americans, through short-term Pell Grants, expanded federal work-study programs, and more options for federal student loan borrowers. Learn more at [THINKPolicy](#).

5G openness

Realizing the full, transformative potential of 5G networks will require open interfaces and open-source-driven cloud technologies that enable competition to develop innovative, secure and cost-effective products. Closed architectures would stifle innovation and competition, raise costs, and put 5G networks' security and

resilience at risk. IBM supports the USA Telecommunications Act, which includes funding to develop and deploy equipment using open standards, and we believe all governments should promote open 5G architectures. Learn more at [IBM Policy Lab](#).

Cross-border data flows

The 21st century global economy increasingly depends not just on the movement of goods, but also on the secure flow of data across borders. Trade policies in the digital age must protect and encourage the movement of data to drive efficiencies, affordability and innovation. For example, two new trade agreements – the U.S.-Mexico-Canada Trade Agreement and the U.S.-Japan Digital Trade Agreement – both include cutting-edge provisions on secure cross-border data transfers, minimal limits on where data can be stored or processed, and digital distribution of digital products without duties or other protectionist measures. Those deals' strong protections for digital intellectual property recognize these assets' value in the 21st century. IBM believes that robust digital trade provisions like these should be a top priority in trade negotiations. Learn more at [THINKPolicy](#).

U.S. Equality Act

IBM supports the Equality Act, which would amend existing civil rights laws to provide consistent and explicit protections for LGBT+ employees. Passing the Equality Act will cement protections for everyone in the workplace, and signal to employees across the U.S. that they can come to work exactly as they are, without fear – just with pride. Learn more at [THINKPolicy](#).

Climate change legislation

IBM has stated for more than a decade that climate change is a serious concern that warrants meaningful action on a global basis, and this remains the case today. That is why IBM supports a responsible plan to tax carbon emissions, supports the Paris Agreement, and is reducing emissions associated with our energy consumption. Learn more at [IBM Policy Lab](#).

Responsible data stewardship

IBM has responsibly managed clients' most sensitive data for decades. In 2019, we further strengthened our commitment to IBM's established principles for trust and transparency by creating a Senior-VP-level Privacy Advisory Committee and by expanding the mission of our Chief Privacy Office, which is deeply integrated with our cybersecurity and data functions, and with each IBM business unit.

At the 2020 World Economic Forum in Davos, Ginni Rometty stressed that the 2020s must be "the decade of trust." By unifying our strategy for cybersecurity, privacy, AI ethics and data, we are driving new synergies and continued business focus as a trusted partner for our clients in this new decade. Trust has never mattered more.

Legacy of leadership

Generations of IBMers have earned the trust of our clients and society through responsible data stewardship. IBM was among the first companies to appoint a Chief Privacy Officer (in 2000) and to develop and publish a [genetics privacy policy](#) (2005). IBM was also an early leader in developing and adopting the [EU Data Protection Code of Conduct for Cloud Service Providers](#), and in securing certification under the [EU-US Privacy Shield](#), and was the first company in the world to become certified under the [APEC Cross-Border Privacy Rules](#).

In 2018, we asserted simple, clear principles on some of our industry's most pressing issues: from the responsible handling of data, to the need for trust, transparency and fairness in AI and other advanced technologies that are already transforming our world. In 2019, we further [strengthened our commitment](#) to these principles.

Engaged with regulatory change

IBM has strong governance processes in place to address new industry standards and regulations as they emerge, so that IBM complies with data privacy laws in all countries and territories in which we operate. IBM believes strongly that consumers, wherever they reside, deserve consistent privacy protections — such as knowing what personal data is collected, and being able to

access it, delete it, or opt-out of having it collected in the first place when there is no legitimate reason to do so. IBM also believes companies should be accountable for protecting consumer data, and governments should establish stable policy environments where new services and technologies can grow.

Ethical AI

The promise of AI technology can only be reached if it is used ethically and responsibly. That's why IBM published a set of ethical principles for AI years ago: AI should augment (not replace) humans, and any use of AI should be transparent, explainable, fair and robust. We provided these principles as a roadmap for other companies to follow.

IBM has established a strong AI ethics governance system and has developed and released tools to help provide transparent, explainable and fair AI. In January 2020, the IBM Policy Lab issued policy recommendations calling for a risk-based approach to the regulation of AI. In February 2020, IBM was one of only two companies asked by the Vatican to be the first signatories to the [Rome Call for AI Ethics](#), which advocates for a human-centered approach to AI.

We continue to drive workforce education with an enhanced Privacy@IBM program that includes a mandatory data privacy course for IBMers. In 2019, its focus was on IBM's data privacy policies and principles, following its 2018 focus on the European Union General Data Protection Regulation. The course is issued to all new employees within their first few months at IBM, and annually to all active full- and part-time employees. A version of the course is also made available to IBM contractors and affiliates.

AI Ethics Board puts principles into action

Trust and transparency are paramount to operating in our 21st century digital era.

We live in an age awash in data. This presents an opportunity to leverage that data through new technologies, such as AI, to help address some of the world's most pressing challenges. However, this opportunity is tempered by the challenges of using data responsibly.

IBM recognized early that clearly articulating principles around the ethical deployment of AI technologies was critical — backed by a strong commitment to putting words into practice. Our commitment is represented by our long-standing values, our Trust and Transparency Principles, and several recent developments: IBM signed the Vatican's Rome Call for AI Ethics, created the Notre Dame-IBM Technology Ethics Lab, published our Points of View on Facial Recognition and the Precision Regulation of AI, issued our AI Explainability 360 Toolkit as an open source resource, and contributed to the EU High-Level Expert Group's Guidelines for Trustworthy AI.

While continuing to collaborate with governments, companies and other organizations, we also embraced the need for an internal governance framework and process to vet AI opportunities based on well-defined guidance around privacy and security.

For cases without simple answers, we established an internal AI Ethics Board and a network of AI “focals” throughout our business for centralizing the assessment of more complicated questions. The board is comprised of a cross-disciplinary team of senior IBMers, co-chaired by IBM's Chief Privacy Officer and AI Ethics Global Leader, and reports to the highest levels of the company. This has created a robust governance framework that permeates IBM's culture and our decision-making — connecting principles with practice.

AI ethics and COVID-19

Since the start of the COVID-19 pandemic, IBM has worked with clients and governments to apply our technology and expertise in ways that can make a meaningful difference. From minimizing disruption through resiliency and adaptation, to accelerating scientific discovery and rapidly delivering trusted information



IBM signs the Rome Call for AI Ethics

to citizens, we are focusing on the promise of good tech when society needs it most.

Our consideration of new challenges and opportunities — from epidemiological modeling to contact tracing technologies — is grounded in the values and principles that have guided generations of IBMers. Our AI Ethics Board enables us to do this through an actionable and practical process that is flexible and adaptable for a world that's constantly changing. And nothing has tested this model like COVID-19.

Accountability is at the heart of our efforts across the full scope of our business activities, from client engagements, to tools we launch to help promote the health and safety of IBMers. As the world adjusts to a “new normal,” IBM will continue to bring the best of our technology and expertise to bear while firmly upholding our long-standing and enduring values.

Joel Mangan
Executive Director, P-TECH



Supporting the IBMer

IBM is dedicated to its employees' professional growth and personal well-being.

We invest in resources to help IBMers develop their skills and leadership potential, and we continue to build on IBM's legacy of leading the market in welcoming and supporting a diverse, inclusive workforce.

Health and safety

IBM's commitment to employee health, safety and well-being is integrated throughout our business and implemented with programs built on evidence-based strategies, real-time insights and innovative solutions. This promotes business and organizational resilience, underpinned by risk management, compliance and innovation. In 2019, IBM centered its approach to employee well-being on continual improvement and addressing emerging health and safety risks.



Awards and recognition

America's Safest Companies

EHS Today magazine named IBM to its 2019 safest companies list, for programs that place a high priority on employee health and safety.

Workplace Health Achievement Award

The American Heart Association recognized IBM with a gold-level award for our workplace health programs.

COVID-19 internal response

Today, health and safety continue to be a top priority for IBM as we face the COVID-19 pandemic. IBM is committed not only to protect IBMers but also to assist with the prevention of secondary transmission and spread of the COVID-19 virus. Our pandemic plan and response revolve around four principles:

- Employee health is our top priority.
- Our plan and response are data-driven and evidence-based.
- We comply with all government requirements.
- We focus on business continuity and maintaining critical operations.

Early in the course of the outbreak, IBMers were provided guidance on health, travel, meetings, and working on-site or from home. Preventive measures include restricting nonessential travel and large in-person meetings, limiting employees coming into the worksite to those that are essential, screening of IBMers and visitors coming into IBM locations, employing strict social distancing and a no-handshake policy, providing personal protective equipment, and introducing specialized training for IBMers working in unique risk situations. Exposures are investigated and managed through a robust case management system. Employees are provided with 24/7 access to a centralized communication platform — Ask Health & Safety — where they can raise questions or concerns. Most importantly, IBMers are enabled to protect themselves against the virus through education and bidirectional, timely and targeted communications.

Rapidly adapting to new ways of working

When nearly 95% of IBM's global workforce was suddenly working from home and possibly needing to for some time, they needed to establish effective working norms, policies and practices. IBM established secure, cloud-based solutions that enabled access to critical information without requiring VPN access. We also recognized that in this environment, managers became IBMers' primary source for guidance, direction and support. IBM established the Leading in Challenging Times microsite as the platform for providing timely critical information, tips and practices

for maintaining employee engagement, productivity and emotional support during uncertain times. IBM continues to leverage this platform as a clear channel for constantly evolving managers' need-to-know information worldwide, including:

- Global ask-me-anything sessions with key functional leaders on topics such as health and wellness, employee engagement, positive leadership, and skills building for virtual-first operations.
- Be Resilient, a new collection of IBM-focused practices and tools to ensure everyone is equipped to handle challenges, to bounce back smarter and stronger, and to thrive in the face of stressors, changing demands, and opportunities.
- Relevant critical information related to technologies, methods and practices for leading effectively in a crisis, adapting to challenges, working in digital distributed teams, and establishing trust and high performance. This was highlighted through a Leadership Live broadcast hosted by our Chief Leadership, Learning and Inclusion Officer, with external leadership experts and thought leaders.

Health and Safety Management System

IBM's Health and Safety Management System, established in 1999, integrates occupational health and safety programs globally with evolving business needs. Our programs are focused on identifying, assessing and addressing health and safety risks that IBMers may be exposed to based on their line of work, or emerging risks such as mental health issues or the current pandemic.

In 2019, following evaluation by a third-party auditor, IBM's HSMS obtained corporate-wide [certification](#) to the ISO 45001:2018 standard. IBM's global certification is based on a three-year cycle, with a certification audit in the first year and surveillance audits in the second and third years.

IBM understands that the work environment is one of the most

significant factors that can affect IBMers' mental health, and one that IBM can influence. On World Mental Health Day in 2019 (October 10), IBM launched initiatives centered on the prevention of psychosocial risk factors that could have a negative impact on individuals and teams. These initiatives focus on:

- Establishing and communicating IBM's point of view and leadership commitment to workforce mental health.
- Reducing stigma associated with mental health conditions, by helping IBMers recognize how mental health issues can affect anyone.
- Creating awareness of psychosocial risks among employees, and highlighting resources and benefits available to IBMers that enable them to help themselves and others.

Continually improving IBM's HSMS and addressing emerging risks not only helps ensure the health and safety of IBMers and the communities in which we work and live, but also enables IBM to help clients succeed.

IBMers respond to the pandemic

Thousands of our colleagues volunteered their time and professional skills to help communities cope. Here are two of their stories.

Virtual enablers

In February, COVID-19's impact in Italy was becoming apparent and when schools in Lombardy were closed for 10 days, many anticipated a much longer shutdown.

"We knew the schools did not have the tools for distance learning, and we immediately imagined a project," says Floriana Ferrara, an IBM Italy corporate citizenship manager. She designed a partnership with Cisco, which provides Webex licenses to schools while IBM volunteers help set up the system and mentor teachers on using it. When Italy closed all schools on March 5, the volunteers were ready to help approximately 150 elementary schools nationwide.

The team shared its approach with other IBMers and in Madrid, Carmen Torres Villarreal energized other volunteers to reach out to schools throughout Spain. In just four days, that volunteer corps grew to nearly 600 helping 150 schools and universities. Then the initiative scaled worldwide: 4,000 IBMers supporting more than 250,000 students in thousands of schools and organizations.

"The reactions from teachers, students and parents are beautiful," says Ferrara. "The virus stopped many things, but we could not allow it to stop education."

Red Cross facilitator

A 2016 earthquake motivated Ivana Mangione to volunteer with the Red Cross in Milan. In response to the 2020 pandemic, she took a leave of absence from IBM Italy to help the Red Cross however she could.

Ivana began spending most nights as an ambulance crew member, often in protective gear, transporting the sick. She then started spending days performing an operations role with the Red Cross psychosocial support team, using her decades of professional and managerial experience. Ivana managed the support team's regional operations, documented org charts and created training materials. "No one was prepared for this type of remote support," she says. "We need to stop this monster."



Ivana Mangione, IBM Italy

Her round-the-clock experiences also inspired IBM developers to create a tool that uses Watson Discovery to enable Red Cross psychologists to collect and analyze comments and assess meaningful data.

Read more about how IBMers and their company are responding to COVID-19 in the [IBM News Room](#).

Skills and leadership development

IBM is committed to helping IBMers accelerate their learning journeys. Our strategy for leadership and learning is driven by data, rooted in science, and deeply human-centered.

\$452M

2019 investment in IBMer learning

29M

Total learning hours in 2019 worldwide, an average of 77 per IBMer

473,000

Badges earned by IBMers for completing courses in 2019

IBM's digital learning platform, Your Learning, uses Watson™ AI technology to generate personalized recommendations for IBMers. We expanded it in 2019 by launching Your Learning Boost, a personalized app that enables peer-to-peer collaboration and social sharing, similar to a fitness tracker. Available 24/7 on mobile and desktop devices, these platforms enable IBMers to set learning and skilling goals, challenge others, and receive digital nudges and notifications. Your Learning now integrates with Credly badges – digital credentials that can be shared on social and professional networks, showcasing learning and skills achievements in real time.

Also new in 2019 is a learning dashboard for IBM managers. It helps them better understand, in real time, their teams' skills and learning goals. This dashboard is driving more informed conversations between managers and IBMers and helping to improve development plans and learning recommendations. These new tools, backed by a campaign to drive continuous learning deeper into our company culture, resulted in an average of 77 learning hours per IBMer in 2019, increased over 20% from 2018.

Management and leadership

Positive Leadership Edge is an initiative to build a strong leadership culture across IBM by focusing on habits that drive engagement and high performance. Launched in 2018, the program reached 28,000 IBM leaders in 2019, including 75% of IBM executives globally. Surveys of IBMers led by a manager who participated in the program found that they felt more engaged, and 92% reported a positive impact from their managers' behaviors.

In 2019, 85% of all IBM managers participated in core management training to help them align with current expectations and modern, evolving best practices. Employee engagement of teams led by managers attending these programs has increased 6-10 points.

Executive and executive pipeline development is evolving with innovative, behavioral-science-based assessments, combined with traditional experience, performance and business-result data. Our personalized, data-driven development, identification and selection processes are increasing the diversity of qualified candidate pools, improving talent discussions and decisions, and incorporating IBMers' aspirations, capabilities, and evidence-based behaviors.



Your Learning uses AI to generate personalized recommendations for IBMers.

Diversity and inclusion

IBM is an innovation company that solves the hardest problems in business and society. This work requires a highly skilled, truly diverse workforce and an inclusive culture that enables people from all backgrounds to thrive.



IBMers participate in 2019 NYC Pride March

A diverse and inclusive workplace leads to greater innovation, agility, performance and engagement, enabling both business growth and societal impact. We know this from our company’s long, proud history as a pioneer in diversity and inclusion. In 1899, IBM’s predecessor hired its first women and black employees, and in 1935 we established “equal pay for equal work.” Less than 20 years later, IBM Chairman Thomas J. Watson wrote Policy Letter No. 4, history’s first corporate equal opportunity policy, more than a decade before the U.S. Civil Rights Act. We’ve expanded our nondiscrimination policy to include sexual orientation (1984), gender identity and expression (2002), and genetics (2005).

IBM continues that legacy with programs and policies that set high standards and foster a culture of inclusion in which all IBMers can thrive at work because of who they are, not in spite of who they are. Core to the continuous evolution of IBM’s diversity strategy is the involvement of members of each diversity constituency. This has led IBM to many industry-leading innovations, such as extending same-sex partner benefits in 50 countries, and increasing paid parental bonding time up to 20 weeks for birth moms and 12 weeks for dads and adoptive parents.

Still, the forces of systemic racism, sexism and bias have contributed to lower representation of women and minority groups in our industry. If we continue to draw on the shared talent pool in our industry, we will make little progress. This is why IBM invests heavily in helping people outside of IBM gain “new collar” skills. Last year, 15% of IBM’s new U.S. hires had nontraditional backgrounds, hired based on skills instead of looking only at their degrees. We are committed to taking bold steps to ensure equity at IBM and in our communities because it’s the right thing to do, and the right thing for our business. We are committed to continuously and sustainably improving diversity within our global leadership team and at all levels in our organization. We demonstrate our commitment through rigorous senior executive accountability for diversity and inclusion outcomes, programs to accelerate hiring, development, advancement and inclusion, as well as outreach and advocacy to enable opportunity for underrepresented and disadvantaged groups.

An important milestone in our journey is for IBM to meet or exceed the diversity of skilled talent in the labor market, for every underrepresented group, and at every level of our company. But that's not enough. It's also about ensuring IBMers from diverse backgrounds feel safe and supported, are engaged, build skills, and are able to achieve their greatest potential. While we have taken significant actions and made progress, we have work to do.

Leadership accountability

Leadership action and accountability are critical to fostering an inclusive culture at IBM, and diversity is a business imperative supported by formalized goals and personal commitments.

In 2018, we made an important shift in how we hold leaders accountable for increased diversity. Instead of focusing on increasing diversity in aggregate, we began to require improvement in the career progression and representation of each underrepresented minority group and women. At IBM, executive bonuses are calculated in part by the progress business units make in improving diversity for underrepresented minorities and historically disenfranchised populations. IBM's senior executives receive a monthly diversity and inclusion scorecard so they can see progress in their organizations and continually evolve their actions to improve. Our CEO and senior vice presidents hold monthly reviews of executive hires, promotions, losses, and the rate of hiring for diverse populations. This is also reviewed twice per year with the IBM Board of Directors.

The IBM Board itself focuses on ensuring its members reflect a diversity of backgrounds, including gender, ethnicity, talents and perspectives. For example, IBM has had Black and female representation on the company's Board of Directors for several decades.

IBM takes a data-driven approach to D&I to create an even more inclusive environment. By providing managers with AI-driven tools and insights, we can mitigate unconscious bias, for example, in compensation and hiring decisions. IBM also mitigates bias by giving IBMers control of their career journey by providing an AI-enabled digital experience that offers internal job recommendations that match their skills and experience.

Industry-leading development, sponsorship and allyship programs

IBM provides development and career acceleration programs focused on women and underrepresented minority groups. Some of our many development programs for women and minorities include:

- Pathways to Technical Leadership helps mid-level technical women advance.
- Elevate and Building Relationships and Influence programs help prepare high-potential women for leadership roles.

100%

IBM scored 100% on the Corporate Equality Index by the Human Rights Campaign for the 16th consecutive year in 2019.

6,000

IBMers are certified LGBT+ Allies.

- The SOAR Initiative accelerates careers of high-potential Black and Hispanic IBMers by pairing them with senior executive sponsors to act as mentors and career advocates, and provide developmental experiences.
- Hispanics@IBM Influence helps Hispanic IBMers develop their external eminence.
- The Black, Hispanic, and Native American mentoring programs help high-potential entry and mid-level professionals accelerate growth in technical and leadership careers.

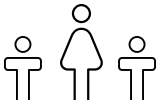
Our returnship program helps people from a wide variety of backgrounds change or reignite their careers by joining IBM for on-the-job learning to build highly valued tech skills in areas such as cybersecurity.

Additionally, we have focused on increasing IBMer allyship to enable an inclusive environment where IBMers feel comfortable, supported and can thrive. IBM has significantly bolstered employee education programs that strengthen IBMer advocacy for women and minorities by addressing sexism, racism, bias mitigation, allyship, covering, leading with inclusivity, and other related topics. These are regularly refreshed and some offerings, such as the LGBT+ Ally Championship Badge, are commercially available. In 2019, IBM conducted mandatory sexual harassment and bullying prevention training for all IBMers globally, reinforcing the expectations of a harassment-free workplace.

As members of IBM's Business Resource Groups, 50,000 IBMers are using their passion for equality to co-create the future of diversity and inclusion at IBM. With over 250 chapters, BRGs enable passionate IBMers to develop programs that advance diverse groups within IBM and support social programs to impact the community at large. We also host Executive Councils for Global Women, LGBT+, People with Diverse Abilities, and in the U.S., for Black, Hispanic, Asian/Pacific Islander, Native American, and veterans. These councils are each sponsored by an IBM senior vice president and engage the executives from each constituency to help grow inclusion, enable development and advancement, support the attraction and retention of diverse talent, and serve the community. The councils have adopted an agile way of working, with clear outcomes and self-directed work teams to advance IBM's representation and culture of inclusion.

Together, our commitment to innovation continues. In 2019, IBM hired 700 veterans. And, our "returnship" and apprenticeship programs created opportunities for more than 300 new IBMers. We are dedicated to hiring neurodiverse people. We have 1,400 IBMers who are members of this community. We offer internship and work placement programs for autistic people. In 2019, in our North America entry-level seller hiring program - one of IBM's largest annual hiring programs - 25% of hires were from underrepresented minorities and 51% were women. Through ongoing mentorships and rotation assignments, we focus on helping these hires grow and thrive.

IBM expanded gender affirmation benefits in 2019. These benefits are now offered to IBMers in the United States, Brazil, Canada,



Working Mother included IBM in the top 10 on its list of Best Companies for the 34th consecutive year.



Top Supporters of HBCUs (Historically Black Colleges and Universities) and was named by LinkedIn as a top employer for HBCUs.

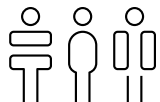
Hong Kong, India, Ireland, Mexico, the Philippines, Singapore, Thailand and the United Kingdom. In June 2019, we launched a feature enabling IBMers to display their pronouns on their profiles in our global intranet employee directory. We continue our work on making available all-gender rest rooms, furthering pronoun enablement, and ensuring our tools and applications use inclusive language.

As a result, IBM is frequently recognized for its leadership in inclusion. The Human Rights Campaign named IBM a Best Place to Work for LGBTQ Equality in 2019, and gave IBM a 100% score on its Corporate Equality Index for the 16th consecutive year. IBM was ranked at No. 4 on the 2019 list of Top Supporters of HBCUs (Historically Black Colleges and Universities) and was named by LinkedIn as a top employer for HBCUs. Also in 2019, Working Mother included IBM in the top 10 on its list of Best Companies for the 34th straight year. For a detailed list of recognition IBM's D&I work received in 2019, see the awards and recognition section.

Outreach and advocacy

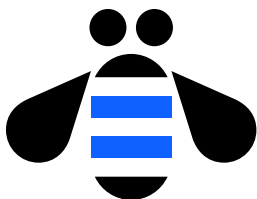
IBM has long been a leader in advocating for legislation and public policies that promote and advance a diverse and inclusive society. IBM engages in policies, not politics, and we continually work closely with policymakers globally to advance our values of equality and inclusion.

- We have been a vocal advocate for fair and equal treatment of LGBT+ communities globally. In 2017 IBM led a grassroots coalition to successfully defeat discriminatory “bathroom bills” in Texas. The following year we supported marriage equality in Taiwan, Northern Ireland and the Czech Republic. In 2019, IBM Chairman Ginni Rometty wrote a letter to the U.S. Congress urging passage of the Equality Act, and the company joined an amicus curiae petition at the Supreme Court in support of a recent decision to ban employment discrimination in the United States on the basis of LGBT+ status.
- Since 2017 we have been a leading corporate voice in pushing for a permanent solution to the Deferred Action for Childhood Arrivals (DACA) program in the U.S., bringing IBM's Dreamers to Washington several times to meet personally with legislators. Ginni Rometty also personally met with policymakers to push for a DACA fix, and published a letter to Congress affirming our position. IBM joined an amicus curiae petition in support of Dreamers at the Supreme Court and welcomed the recent decision by the Court to continue that program.
- In June 2020 IBM strongly supported passage of a hate crimes law in Georgia, and IBM CEO Arvind Krishna sent a letter to key U.S. senators and members of Congress, outlining detailed policy proposals to advance racial equality and declaring IBM's decision to sunset facial recognition capabilities.



IBM human rights principles

IBM's stance on human rights is informed by international standards, including the U.N. Guiding Principles on Business and Human Rights, the International Labour Organization Declaration on Fundamental Principles and Rights at Work, and the U.N. Universal Declaration of Human Rights. For more information, refer to our human rights principles and global employment standards at ibm.org/responsibility/policies.



Be Equal is our campaign to engage IBMers, clients and society in promoting the advancement of fairness and equality in business and society. Since its 2019 launch, Be Equal has engaged tens of thousands of women and men worldwide to pledge their commitment to equal representation.

The IBM Institute for Business Value released a study in 2019 on the continuing gender gap in corporate leadership. [Women, Leadership, and the Priority Paradox](#) offers three recommendations to accelerate progress: make gender equality a business priority, create a culture of inclusion, and make the organization's leadership accountable for results. Also in 2019, the launch of the Be Equal campaign brought IBMers, clients and society at large together to pledge commitment to inclusion, with an initial focus on gender equality. Since then, Be Equal has expanded to address inclusion for all diverse communities. The Be Equal brand will become our new platform for inclusion, equipping ourselves and others with tools to be both unique and unified, while also open to all and boldly promoting inclusive ideas for all identities and dimensions of humanity. We support all IBMers in continuing to fight discrimination in all its forms and wherever it exists.

About our diversity data

IBM has a highly skilled workforce. More than 350,000 IBMers include developers, consultants, client services specialists, and research scientists. IBMers are the world's leading experts in the future of industries, cloud, AI, quantum computing, cybersecurity and more.

As we engage with IBMers on allyship and fighting bias, enhanced transparency will enable more actionable discussions and greater employee participation in advancing racial and gender equity. We are sharing this data because we've concluded by making ourselves publicly accountable we will accelerate our progress. We know from our history that we solve the most pressing issues when we open up and co-create.

In 2019, we achieved record diversity for IBM across all representation groups. Additionally, when measuring the diversity representation at IBM compared to the diversity of skilled people in the labor market, we exceeded or met this metric for worldwide women overall, worldwide women in management, U.S. Asian overall and U.S. Asian in management. While we have taken significant actions and made progress, we have ongoing work to do.

Our diversity data is shared on page 61 of this report.

Measuring representation is not enough. We must ensure IBMers from diverse backgrounds are engaged, feel supported to be their authentic selves, build skills, and achieve their greatest potential. Tracking progress in these areas is critical.

- **Inclusion and engagement:** In 2019, IBM achieved best-in-class inclusion scores, with 87% of IBMers saying they can be their authentic selves at work. In 2019, IBM saw employee engagement scores increase for Women (+3 points year over year), Black IBMers (+2 points), Hispanic IBMers (+4 points), and Asian IBMers (+2 points). Minority groups all had higher engagement scores than the average.
- **Career advancement:** From 2017-19, the promotion rate for Black IBMers doubled for both executives and nonexecutives. Black executive representation is up 1.3 percentage points since 2017, but lags our overall representation goal. Women represented 41.8% of IBMers promoted to executive positions in 2019, and 36% of executive hires. We had a 4.5-point increase in women in leadership representation since 2017. Hispanic executive representation has moved more slowly, up just one point, while Asian IBMer representation increased at every level.
- **Building skills:** IBM fosters a deep culture of learning to create career opportunities for all, in a rapidly changing industry. IBM's digital learning platform, Your Learning, uses Watson™ AI technology to generate personalized recommendations for IBMers. We expanded it in 2019 by launching Your Learning Boost, a personalized app that enables peer-to-peer collaboration and social sharing, similar to a fitness tracker. Available 24/7 on mobile and desktop devices, these platforms enable IBMers to set learning and skilling goals, challenge others, and receive digital nudges and notifications. In 2019, the average IBMer logged 77 hours of learning, reflecting our commitment to every IBMer having access to the resources to build strategic skills, grow their careers, and face the future with confidence. In the United States, Black IBMers earned more than 6,000 badges in 2019 and Hispanic IBMers earned more than 5,000. Globally, women earned nearly 150,000 badges.

I pledge *not* to remain silent.

I pledge to better understand the Black experience.

I pledge to fully embrace race and ethnicity with empathy.

I pledge to demonstrate equality through action.

I pledge to create safe spaces to speak out.

I pledge to be an upstander in every environment.

I pledge to become an ally.

Emb(race)

With issues of race and justice at the forefront of the national conversation, we seek to help transform this moment of clarity into lasting change. As a start, individual IBMers have been making pledges to reaffirm a commitment to allyship and advocacy — not just today, but every day.

P-TECH student in
Casablanca, Morocco



Driving social impact at scale

IBM helps communities worldwide take on challenges big and small.

We apply the power of technology, talent and collaboration to help people develop skills for the digital age, to improve access to quality healthcare, and to address many other pressing social challenges.

Education and skills

IBM applies technology and talent to help people worldwide build the skills required for today's new collar jobs. We partner with experts in the public and private sectors on programs designed to have broad, lasting impact and improve access, inclusion, equity and quality.

220

P-TECH schools in 24 countries

7,000

Online courses available from SkillsBuild

10,000+

Software assets available from the IBM Academic Initiative

P-TECH

The renowned P-TECH education model, which addresses the worldwide STEM skills gap, continues its exponential growth. P-TECH, which currently has 150,000 students in its pipeline, combines public high school and no-cost community college with preparation for “new collar” jobs. P-TECH students, primarily from underserved backgrounds, graduate with a no-cost associate degree, along with workplace experiences including mentorships and paid internships. In 2019, the number of countries that had announced or opened P-TECHs grew from nine to 24. The amount of operational schools doubled to 220, and community college participation increased from 77 to 200. Since P-TECH was launched in 2011, IBM has provided hundreds of paid internships and helped grow the number of industry partners to 600. In 2019, we held the first Planet P-TECH event, bringing together more 350 P-TECH school leaders, students and industry partners from 20 countries to share best practices and unveil our free Open P-TECH digital learning platform, which went live in 2020. P-TECH was recognized by Insight into Diversity's 2019 “Inspiring Programs in STEM Award.” Learn more at ptech.org and open.ptech.org.

Apprenticeships

IBM's apprenticeship career training and readiness program is designed for those looking to break into the field of IT. Apprentices are paired with IBM mentors and take IBM classes to acquire tech and business skills ranging from mainframe computer administration and cybersecurity, to software development and project management. Five hundred apprentices participated in 2019. Meanwhile, IBM's Tech Re-Entry program facilitates “returnships” for those looking to return to the workforce. The returnship helps them modernize their skills and adjust to new ways of working by combining digital learning paths with in-person mentorship from scientists, engineers and sales/marketing experts. IBM has hired our returners as software developers, digital designers and project managers. Participants of both initiatives are paid the entire time, making them great examples of earn-and-learn programs. To help other companies train talent, IBM helped launch the Consumer Technology Association Apprenticeship Coalition in 2019.

SkillsBuild

SkillsBuild supports people looking to reenter the workforce or reinvent their careers. SkillsBuild provides a career-fit assessment, curated online learning content from IBM and partners, digital badges, project-based learning, and personalized coaching to help job seekers develop the professional and technology skills and experience they need. The program is delivered in partnership with NGOs and nonprofits that work 1-to-1 with participants including migrants, military veterans and underemployed people looking for in-demand new collar jobs. It was launched in 2019 with 22 nonprofit partners and 7,000 online courses in nine countries – including France, Germany, Turkey, India and the United Kingdom – and is being extended to North America, Japan and more countries in 2020. Learn more at skillsbuild.org.

AI education

Teachers need to understand artificial intelligence in order to prepare the next generation of our workforce. That's why IBM now offers teachers in North America no-cost access to IBM AI Education courses, which teach AI's foundational concepts and provide resources to help incorporate AI into the K-12 curriculum. Launched in late 2019, the initiative is a collaboration with mindSpark Learning, a leader in professional development for educators, and includes nine online courses on robotics, ethics, design thinking and more. Learn more at mymindsparklearning.org.

Veterans Employment Initiative

Military veterans in the U.S., Canada and U.K. transitioning to civilian tech jobs, such as cybersecurity experts and data analysts, are being re-skilled by IBM's Veterans Employment Initiative. This provides free, in-person data analytics software training, along with certification and job placement assistance from NPOs, helping hundreds find jobs at IBM and with industry partners. More than 700 veterans have participated in the training program since its inception. Veterans interested in working at IBM now also use the Watson Candidate Assistant, which matches their credentials to open IBM positions. In 2020, the Veterans Employment Initiative will be made more accessible and convenient with a comprehensive online option – providing technical and career readiness coursework, certifications, coaching and job placement assistance. Learn more at ibm.org/initiatives/veterans.

IBM Global University Programs

The IBM Global University Programs organization collaborates with faculty and students to provide resources for teaching, research, and skills training in strategic technologies such as quantum computing, blockchain, cybersecurity, AI and data science via three innovative initiatives:

- The IBM Academic Initiative provides students and faculty at accredited academic institutions with self-service access to select IBM resources at no charge for classroom and noncommercial research purposes. The foundation for many of these resources is convenient access to IBM Cloud Lite, enabling users to create a new course, add a practical lab, or develop relevant use cases. In 2019, we expanded its software catalog from 1,200 resources to over 10,000 and made the site easier to use, resulting in an increase in assets distributed from 75,000 in 2018 to over 200,000. Learn more at ibm.com/academic.
- The IBM Skills Academy offers skills-oriented digital training to help faculty empower students of diverse backgrounds with the skills needed in today's job market. Its eight emerging-technology tracks leverage industry use-cases and encourage experimenting with big ideas. Students earn digital badges that can lead to immediate job opportunities. During the COVID-19 crisis, the IBM Skills Academy was quickly reengineered as a 100% digital offering, available immediately to universities evolving to online teaching. Learn more at skills-academy.mylearnerportal.com.
- IBM University Awards support basic research, curriculum innovation, and educational assistance in focus areas that are fundamental to innovation in the 21st century and strategic to IBM's core business. Learn more at ibm.com/university/awards.

These global efforts are supported by thousands of IBM Academic Ambassadors – volunteers who collaborate with students and faculty in areas of mutual interest. Learn more at ibm.com/university.



STEM for Girls in India

Communities

IBM collaborates with organizations dedicated to building stronger communities around the world by sharing our expertise and finding new ways to apply technology to a range of social challenges.

One of IBM's priorities is expanding opportunities for women and girls worldwide. IBM Service Corps has supported this effort in 30 countries.



61% (475 projects) support sectors that serve women with basic services such as agriculture, education, employment, energy, health, housing, and water and sanitation.



40% (314 projects) have women as primary clients and beneficiaries.



\$42 million worth of pro bono consulting services provided in these engagements.

IBM Service Corps

IBMers grow personally and professionally by applying their expertise to address local and global challenges on a pro bono basis. For example, IBM Service Corps deploys teams of employees to partner with social enterprises, nonprofits and governments on issues in education, health, disaster preparedness and economic development. In 2019, IBM Service Corps teams developed and tested disaster response communications technology in Puerto Rico; helped the U.S. state of North Carolina create a protocol for allocating disaster relief volunteers; and helped improve education in Romania, South Africa and Mexico. Since its inception in 2008, IBM Service Corps has helped communities in nearly 40 countries and developed the technical and leadership skills of more than 4,000 employees from 62 countries, with 1,500 pro bono projects valued commercially at over \$100 million. Learn more at ibm.org/initiatives/ibm-service-corps.

Among its 2019 engagements, IBM Service Corps delivered a technical roadmap to **The Nature Conservancy** for developing an open data platform supporting TNC's water initiatives. This was part of a larger collaboration with IBM to raise awareness about global water challenges with the "Forecast: Change" initiative led by The Weather Company. TNC and IBM are extending that work by creating a measurement, evaluation and learning framework to support TNC's work on challenges across the global conservation movement.

IBM Volunteers

IBMers in 92 countries provided 1.25 million hours of sophisticated assistance to their local communities and schools as participants in the IBM Volunteers® initiative. As such, they find opportunities that match their interests and skills, and can obtain IBM grants for recipient organizations. We have updated the 60 Activity Kits available to guide IBMers and volunteers from the general public in their community service; these provide blueprints for delivering engaging learning experiences at schools and community organizations for projects ranging from robotics and recycling, to artificial intelligence and safe tech. Volunteers also bring their own ideas to life: In 2019, IBM volunteers were recognized for bringing



IBM Service Corps in Paraguay

experts together to diminish the impact of natural disasters in Indonesia; helping social service organizations near New York City use analytics to identify vulnerable populations; and applying AI to help scientists identify, follow and study whales — to name just a few initiatives. Learn more at ibm.org/initiatives/ibm-volunteers.

Traffik Analysis Hub

Powered by IBM AI and cloud technology, the Traffik Analysis Hub enables financial service companies, NGOs, nonprofits and law enforcement agencies to collaborate more systematically in their fight against human trafficking — a lucrative financial crime that exploits people for purposes of cheap labor in such sectors as agriculture, prostitution, hospitality and manufacturing. Human trafficking is estimated to be a \$150 billion global industry, more profitable than illegal drugs or white-collar crime, and victimizing an estimated 40.3 million people worldwide. Traffik Analysis Hub enables members to validate and map patterns, trends, and smuggling routes. Traffik Analysis Hub grew to more than 20 members and became one of the largest platforms of its kind, with data on 300,000 trafficking cases. At the European Data Science Awards, the Traffik Analysis Hub platform won for the category “Innovative Use of AI for Social Impact.”

Learn more at traffikanalysis.org.

World Community Grid

IBM’s World Community Grid enables anyone with a computer or Android device to donate their unused computing power to advance cutting-edge scientific research on topics related to health and sustainability. To date, through the assistance of more than 770,000 individuals and 450 organizations contributing 2 million years of computing time, World Community Grid has yielded 50 peer-reviewed papers and supported 30 research projects with publicly available results. Projects include searches for more effective treatments for cancer, HIV/AIDS and neglected tropical diseases. Other initiatives include looking for low-cost water filtration methods and new materials for capturing solar energy efficiently. In 2019, together with Delft University of Technology, World Community Grid launched the Africa Rainfall Project, which aims to improve the quality of highly localized rainfall forecasting in sub-Saharan Africa, where 95% of agriculture depends on precipitation. For 2020, efforts are focused on seeking treatment for illnesses that cause pandemics, starting with COVID-19.

Learn more at worldcommunitygrid.org.



Science for Social Good: Giving back, with science

AI Explainability 360

AI and machine learning are improving workflows and decisions in every industry, but one potential drawback is the difficulty in understanding why AI has made a decision or recommendation. IBM holds as a core principle that new technology such as AI must be transparent and explainable – so in 2019, IBM Research released the AI Explainability 360 toolkit. This comprehensive, open source toolkit uses state-of-the-art algorithms and methods to provide insights into a machine’s decision-making process through a single interface, and empower users to understand their AI models. By adding interpretability and explainability to AI systems, we can help advance the theory and practice of responsible and trustworthy AI. Learn more at [IBM Research](#).

Science for Social Good

IBM’s [Science for Social Good](#) initiative was launched in 2016 to address social and humanitarian challenges using data and AI, drawing on the expertise of IBM Research and collaborating with social organizations and academic researchers. Since then, the initiative has undertaken 28 projects with 19 partner organizations, and published 47 research papers. In 2019, we launched the fourth edition of our program with multiple new projects, including:

- **Guidelines for addressing the opioid epidemic**

The team is using IBM Watson Health® data to develop insights into patterns of addiction, responsible drug prescription practices, and early warning systems, and make them available to providers, payers and public health officials.

- **Causal pathways out of poverty**

Working with CityLink Center, a nonprofit organization in Cincinnati, Ohio, the team is modeling paths out of poverty by analyzing how different social services help lead to outcomes such as employment, wellness, education and housing.

- **Repurposing drugs for cancer treatment**

Data suggests that many off-patent drugs used for non-cancer conditions could also be useful for treating cancer. Working with Cures Within Reach for Cancer, the team is taking a systematic approach to finding and evaluating the evidence on these generic drugs.

Health

IBM works with nonprofit, academic and government entities to explore how information technology can offer researchers new insights into diseases and help improve access to quality healthcare worldwide.

Allied Against Cancer

Uneven access to information can contribute to public health disparities. IBM applies its expertise and technology to address this challenge, with a particular focus on cancer. For example, there are expected to be more than 1.6 million new cancer cases annually in sub-Saharan Africa by 2040, and there aren't many oncologists or resources to handle the workload. In 2019, we helped launch Allied Against Cancer, a multisector partnership that supports the sub-Saharan African oncology community and includes our cofounders: the American Cancer Society, National Comprehensive Cancer Network, and Clinton Health Access Initiative. We work with the African Cancer Coalition, representing experts from 13 countries, to ensure that clinicians have free and convenient access, via an IBM-developed tool, to the most appropriate cancer treatment guidelines. Hospitals in Nigeria, Tanzania, Ghana and Zambia have committed to using "Cancer Guidelines Navigator," and many countries have endorsed the guidelines that power it. IBM also helped develop the ChemoSafe mobile app to promote health worker and patient safety in the handling and administration of chemotherapy. Learn more at alliedagainstcancer.org.

Diabetes study

Type 1 diabetes afflicts 1.6 million people in the United States alone, and while insulin can help manage the disease, there remains no cure for T1D and its cause is unknown. Working with nonprofit JDRF, IBM Research used machine learning algorithms to analyze anonymized data from 22,000 people, searching for clues about an individual's risk of developing T1D and how quickly it will develop. This was the first in-depth, large-scale study to examine when different T1D antibodies appear and their correlations to T1D progression. The resulting progression model could hold enormous potential for developing more precise diagnostic T1D testing and screening, and for assisting other researchers' search for T1D's root causes. Learn more at IBM Research.

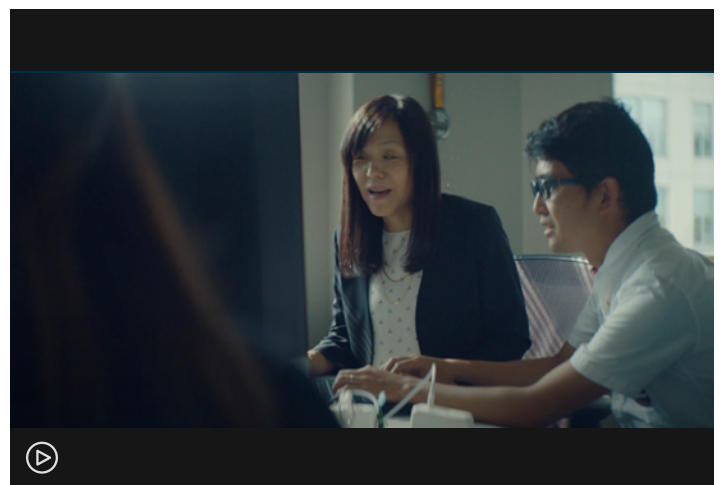
Huntington's disease research

IBM has collaborated since 2015 with the CHDI Foundation — a nonprofit devoted to researching Huntington's disease — to learn more about the causes of the disease's progression. In

2019, IBM published research undertaken with CHDI and the University of California, Los Angeles, about a new AI-based approach that for the first time can predict when patients will begin experiencing symptoms of Huntington's disease, as well as how quickly these symptoms may progress. This work could lead to a better understanding of how these interactions impact other neurodegenerative diseases such as Alzheimer's or Parkinson's. Learn more at IBM Research.

Innovation for the visually impaired

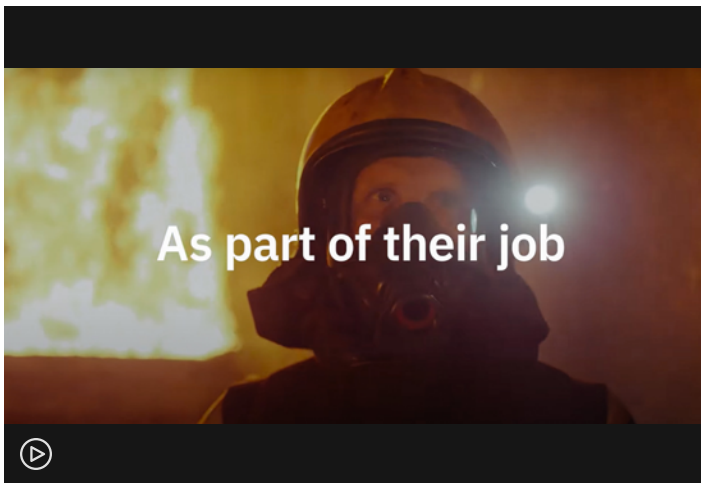
IBM Fellow Chieko Asakawa had an idea for helping visually impaired people to walk more safely — a suitcase-sized, AI-powered device that would use cameras and distance sensors to analyze surroundings, then notify users of obstacles and other dangers. Now, IBM Japan has joined four other companies to develop her idea into a prototype. The consortium includes IBM (providing AI), Alps Alpine (haptic technology), Omron (image recognition and sensors), Shimizu (navigation system), and Mitsubishi (automotive technologies). "It's impossible for visually impaired individuals to walk around town alone, freely and safely," says Asakawa. "I want to make that possible."



IBMer Chieko Asakawa develops technology to help visually impaired people navigate the world.

Disaster response and resiliency

Natural disasters can take lives, cause grief, and upend communities for years. IBM works with communities to address natural and man-made disasters including hurricanes, floods, wildfires and extreme weather influenced by climate change.



2019 Call for Code winner Prometeo

IBM believes that technology can play a role in mitigating the challenges presented by natural and man-made disasters. For example, when the Category 5 Hurricane Dorian hit in the fall of 2019, United Way Worldwide activated its Cognitive Automated Response Learning Assistant, developed with IBM, in key Southeastern states, enabling residents to get vital information faster. In addition, the nonprofits Day One Disaster Relief and Good360 were able to allocate resources more effectively by using IBM's Operations Risk Insights With Watson tool, which provides a dashboard of real-time insights to improve logistics. In Japan, the government recognized IBM for deploying the Disaster Management Information System after Typhoon Hagibis.

IBMers are quick to serve their communities in the wake of an unexpected catastrophe. For example, IBMers were given time off to help communities affected by wildfires in California in the fall of 2019. IBM also deployed employees to advise on the reconstruction of the fire-ravaged Notre Dame Cathedral in Paris, and the Indonesian government recognized the IBMer responsible for a system of seismic sensors that will soon be deployed in that country to help predict and mitigate earthquakes and tsunamis. For six major disasters around the world in 2019, IBM provided technology and services with a market value of \$1.9 million.

Call for Code is IBM's \$30 million, five-year initiative to brainstorm, develop and deploy ideas for mitigating natural disasters. IBM and non-IBM programmers worldwide devise solutions that use cloud, Internet of Things, and artificial intelligence technology to improve resilience against disruptive events. For example, a "mesh" disaster response network — a concept conceived in 2018, and which allows people to relay messages when regular communications are disrupted — was prototyped and tested in 2019. The theme for 2019, which saw more than 180,000 developers from 165 nations donate talent, was again natural disasters, with an emphasis on the improvement of individual health and community well-being. The 2019 winner was Prometeo, an AI-based platform to monitor firefighter health and safety in real time. Learn more at developer.ibm.com.

STEM for Girls across India

Increasing women’s representation in the tech workforce is a priority for IBM.

Girls are pushing the boundaries of traditional social restrictions, and with STEM learning, effective mentorship and career opportunities, they can thrive in the digital economy.

Among IBM’s efforts in this regard is STEM for Girls India, a 3-year program to help high-school girls throughout India by promoting digital literacy, coding/tech skills, career development, and girls’ empowerment. Its goal is to advance the STEM skills and career prospects of over 200,000 girls, as well as 100,000 boys. We began in 2019, working with 10 states to reach over 600 secondary schools and 78,000 students.

“Schools need to break any ‘gendered notions of intelligence’ and encourage girls not only to learn science at secondary and higher levels, but also to pursue careers in STEM.”

Manoj Balachandran
IBM India CSR leader

Science, math and mentors

STEM learning is the key to innovation and the future. The growth of new collar jobs that require technical skills in areas such as artificial intelligence, security or data science presents an opportunity for young people worldwide — as well as a challenge to prepare them with skills and a knowledge base built upon STEM fluency in secondary and higher education.

STEM for Girls India uses a multiyear learning curriculum, starting in eighth and ninth grades. Students get access to the latest technology knowledge, and an environment to test these skills in real-life situations. The initiative includes professional development for teachers, and IBMers are engaged as mentors throughout the year to provide girls with much-needed role models.



STEM for Girls India

“India’s huge talent pool has an amazing opportunity to contribute to our country’s tech prowess. IBM’s collaboration with state governments will help girls participate and become future-ready — better aligned with market shifts and industry needs.”

Sandip Patel
IBM India/South Asia General Manager

Solar array at IBM's Boulder,
Colorado facility



Protecting the environment

IBM is committed to environmental leadership in all of its business activities, from its operations to the design of its products and development of solutions using its technology.

IBM has reported annually on its environmental progress for 30 years. This section includes highlights from our environmental programs and 2019 performance. We also publish a separate annual [environmental report](#) where you can find more detailed information.

Global environmental management system

Our Environmental Management System has been in place for over 30 years and is continually updated to reflect our business and its environmental intersects.

IBM's [corporate environmental policy](#) provides the strategic framework for the company's global EMS. The policy outlines 11 objectives that address environmental considerations of our business.

In 1997, IBM became the first major multinational company to earn a single global registration of its EMS to the International Organization for Standardization (ISO) 14001 environmental management systems standard and we have since expanded and maintained this registration. When ISO issued the ISO 50001 standard on energy management systems in June 2011, IBM achieved verification of conformity of our EMS against this standard within one year of its release, and has maintained it ever since.



IBM's environmental policy objectives

- 01 Provide a safe and healthful workplace.
- 02 Be an environmentally responsible neighbor.
- 03 Conserve natural resources.
- 04 Develop products that are protective of the environment.
- 05 Use processes that do not harm the environment.
- 06 Use energy responsibly.
- 07 Improve environmental protection worldwide.
- 08 Develop solutions to environmental problems.
- 09 Meet or exceed all applicable government requirements.
- 10 Continually improve our performance.
- 11 Conduct rigorous audits and assessments.

Risk identification and management

IBM's overall enterprise risk management process considers environmental risks, including those related to climate change, and helps establish plans for business continuity and asset protection. In addition, our global EMS includes a process for identifying and assessing significant environmental aspects of our business.

IBM considers risks as identified by the Financial Stability Board Task Force on Climate-related Financial Disclosures in its risk management process. IBM senior management assesses the significance of environmental and climate-related risks. They also manage these risks and provide regular updates to the IBM Board of Directors and to its Directors and Corporate Governance Committee (Governance Committee).

Furthermore, as described in the following pages, IBM has established internal objectives and targets for energy conservation, procurement of renewable electricity, carbon dioxide (CO₂) emissions reduction and other key environmental performance indicators. Performance against these objectives and targets is routinely monitored, and results are reviewed annually by the Board's Governance Committee.

Energy and climate change

IBM has a long history of leadership in climate protection. We continue to rigorously work to conserve energy and increase our consumption of renewable electricity to further reduce our CO₂ emissions.

IBM's goals are to:

- Conserve energy each year equivalent to 3% of IBM's annual energy consumption through conservation projects.
- Procure 55% of IBM's worldwide electricity consumption from renewable sources by 2025 – this includes renewable electricity in the grid mix IBM receives from utilities or energy retailers, and renewable electricity for which IBM specifically contracts over and above the renewables in the grid.
- Reduce operational CO₂ emissions associated with IBM's energy consumption 40% by 2025 against base year 2005, adjusted for acquisitions and divestitures.

Our goals for energy conservation, renewable electricity procurement, and CO₂ emissions reduction include the energy consumption and CO₂ emissions reductions taking place in IBM-owned or leased facilities. These facilities include IBM data centers located in facilities managed by third parties where IBM does not procure the energy or control the operations of the buildings – also known as co-location data centers.

IBM's history of leadership in energy conservation and climate protection

- **1973**
Established our global energy conservation program and issued a corporate policy on this topic the following year.
- **1992**
Became a charter member of the U.S. Environmental Protection Agency's ENERGY STAR computer program.
- **1994**
Began to voluntarily disclose CO₂ emissions associated with our consumption of energy and have done so annually for 26 years.
- **2000**
Set our first CO₂ emissions reduction goal when we helped the World Wildlife Fund create its Climate Savers program.
- **2007**
Published IBM's position on climate change.
- **2015**
Voiced our support for the Paris Agreement and then reaffirmed our support in 2017.
- **2019**
Became a founding member of the Climate Leadership Council, supporting its plan for a carbon tax with the tax's proceeds to be returned to citizens as a "carbon dividend."

Energy conservation

We recognize that the most effective way to reduce our CO₂ emissions is to make our operations more efficient and thereby reduce our consumption of energy. Our total 2019 energy consumption was reduced by 4.5% versus 2018 to approximately 4.5 million megawatt-hours. Since 2016, IBM's total energy consumption has been on a downward trend due to our ongoing focus on energy conservation and operational efficiency.

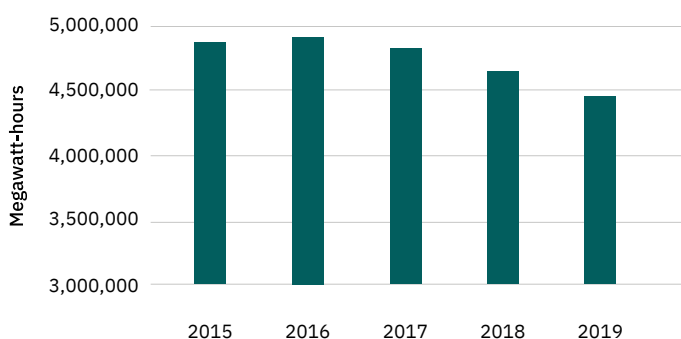
Energy conservation projects globally delivered annual savings equal to 3.2% of our total energy use, surpassing our corporate goal of 3%. IBM implemented 1,660 energy conservation projects at nearly 230 locations, which avoided the consumption of 136,000 MWh of energy, the emission of an associated 47,000 metric tons of CO₂, and saved \$14.4 million in expense. These savings resulted from our continued, across-the-board focus on energy demand, energy efficiency, and the implementation of standardized, global energy conservation strategies at our facilities. The avoided emissions were equivalent to removing more than 10,000 passenger vehicles from the road during the year.

IBM's Smarter Buildings solution — an IBM-developed analytics and Internet of Things application that helps reveal a building's hidden failings and energy efficiency opportunities — is now deployed at 25 major IBM campuses, encompassing 190 buildings and nearly 25 million square feet of floor space worldwide. In 2019, this solution helped IBM avoid the consumption of 11,000 MWh of energy with associated savings of \$800,000.

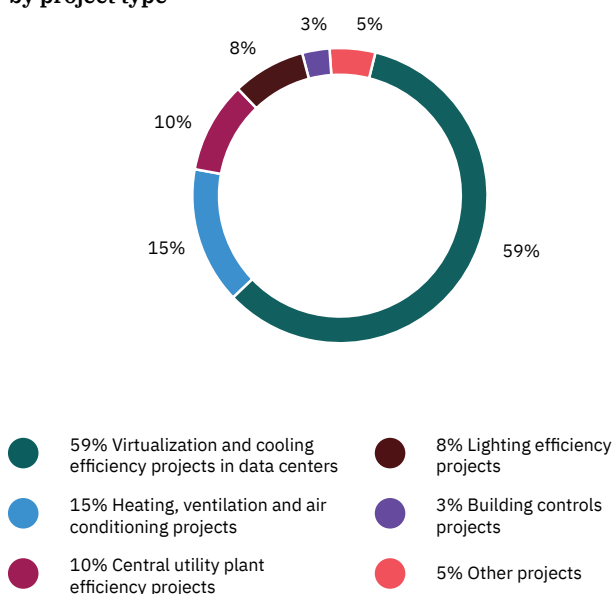
In 2019, 59% (81,000 MWh) of IBM's energy conservation results came from our data centers, saving the company \$9.1 million. These projects included initiatives to refresh our IT infrastructure with more energy efficient technology, increase system virtualization and utilization, and improve the cooling efficiency of our data centers.

From 1990 through 2019, IBM conserved 7.7 million MWh of electricity, avoiding 4.5 million metric tons of CO₂ emissions (equivalent to the annual CO₂ emissions of 520,000 average U.S. homes) and saving \$646 million.

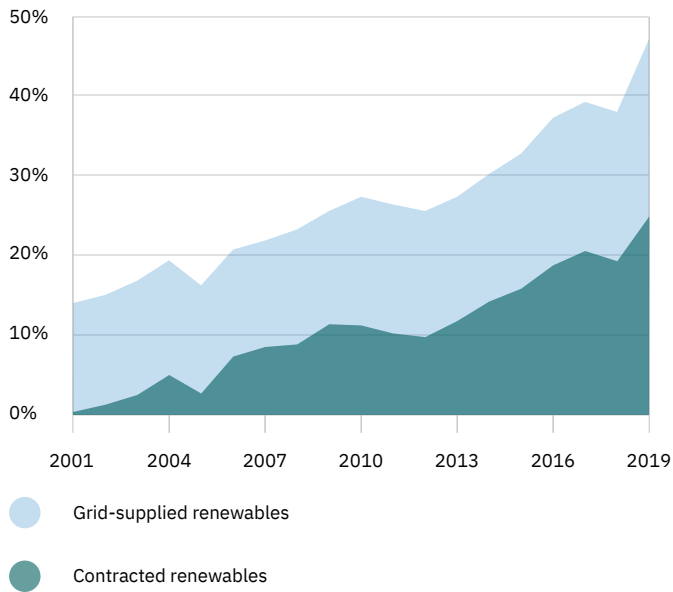
IBM total energy consumption



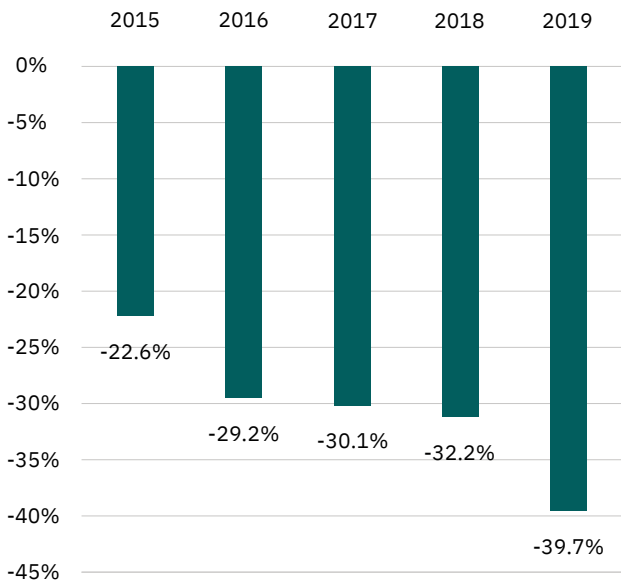
IBM 2019 energy conservation savings by project type



**IBM use of renewable electricity
as a percent of global electricity consumption**



**IBM operational CO₂ emissions reduction
against 2005 baseline**



Goal: 40% reduction by 2025

Renewable electricity

In 2019, IBM increased its consumption of renewable electricity by 18%. Electricity from renewable sources now accounts for 47% (1,790,000 MWh) of IBM’s total electricity consumption, versus our goal of 55% by 2025. Of this total, IBM directly contracted to purchase 25% (948,000 MWh) through its power utility and retail suppliers, which avoided 287,000 metric tons of CO₂ emissions – the equivalent of the electricity used to power 48,000 U.S. homes for one year. The remaining 22% (842,000 MWh) was part of the existing mix of electricity we received from the grid.

IBM’s strategy is to purchase renewable electricity that is generated in the grid regions where our consumption of electricity occurs. This approach enables IBM to actually consume the renewable electricity it purchases when the time of its generation and our consumption coincides, and creates incentives for our electricity suppliers to increase their renewable electricity generation in the places where we actually have demand for such power. IBM does not rely upon the purchase of unbundled Renewable Energy Certificates to offset its consumption of electricity from fossil fuels.

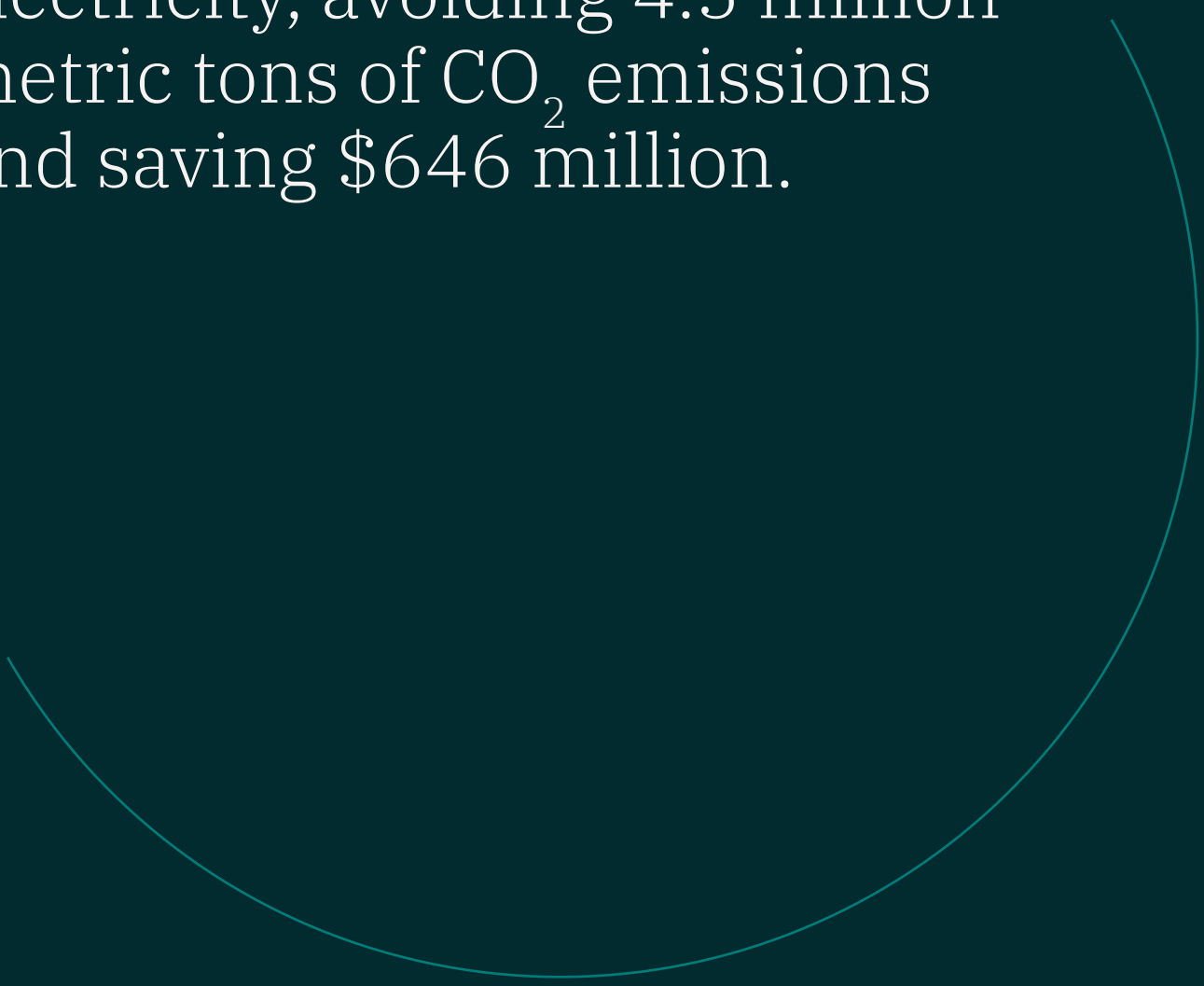
We continue to work with regulated utilities, energy retailers and service companies, and renewable project developers to create shorter-term (4-6 years), economically viable contracting approaches for renewable electricity procurement in the grid regions where we operate.

CO₂ emissions reduction

From 2018 to 2019, IBM reduced CO₂ emissions by 11.1% to 1,222,000 metric tons. In 2019, we reduced CO₂ emissions by 39.7% against a 2005 baseline, nearly meeting our goal of 40% by 2025. Our year-to-year emissions reduction was attributable to a decrease in IBM’s total energy consumption, an increase in our renewable electricity consumption and to lower overall CO₂ emission factors for grid-supplied electricity.

For details on IBM’s complete greenhouse gas emissions inventory, please see our [website](#).

From 1990 through 2019, IBM conserved 7.7 million MWh of electricity, avoiding 4.5 million metric tons of CO₂ emissions and saving \$646 million.



Product design for the environment

IBM established its product design for the environment program in 1991. We design our products to be energy efficient, incorporate recycled content and environmentally preferable materials, and facilitate reuse and recycling at their end-of-life.

Product energy efficiency

One of IBM's product energy efficiency goals is to improve the computing power delivered for each kilowatt-hour of electricity consumed for new server products as compared to equivalent, previous-generation products. In 2019, IBM introduced its next-generation mainframe enterprise platform, the IBM z15™. The z15 uses 20-30% less power than a comparably configured IBM z14®, and improves computing power delivered for each kilowatt-hour of electricity consumed by 31%. IBM's latest POWER9™-based servers improved the work delivered per unit of power consumed — as measured by the Standard Performance Evaluation Corporation (SPEC) Server Efficiency Rating Tool (SERT) — by 30-60% over previous-generation POWER8®-based servers.

IBM became a charter member of the U.S. Environmental Protection Agency's ENERGY STAR computer program in 1992, and we continue to support the program today through our qualification of eligible server and storage products. In 2019, IBM had three POWER9-based servers and 11 storage products certified to ENERGY STAR.



IBM's new z15 mainframe system uses 20-30% less power than its predecessor, the z14.

Product reuse and recycling

IBM initiated product takeback programs in Europe in 1989. In many countries and U.S. states, we offer solutions for the end-of-life management of computer equipment, either through voluntary IBM initiatives or programs in which we participate. IBM's goal is to reuse or recycle end-of-life products such that the amount of product waste sent by our operations to landfills or to incineration facilities for treatment does not exceed a combined 3% by weight of the total amount processed. IBM's global product end-of-life management operations processed 20,800 metric tons of end-of-life products and product waste in 2019. More than 95% (by weight) was reused, resold or recycled, and only 0.8% was sent directly to landfill or incineration facilities for disposal. More information about these programs can be found on our [website](#). IBM has documented the collection and processing of approximately 1.08 million metric tons (about 2.38 billion pounds) of product and product waste worldwide since 1995, when we began including product recovery in our annual corporate environmental report.

Product environmental compliance

IBM has robust processes and state-of-the-art tools to help ensure our continued compliance with worldwide environmental laws and regulations. New or modified requirements are actively identified, reviewed and acted upon as necessary. We also provide education and training materials for IBM's suppliers to help them deliver compliant parts and assemblies for use in our products. For more on IBM's product compliance processes, please see our [website](#).

Conservation and pollution prevention

We continue to seek opportunities to reduce our use of water and the generation of wastes from our operations. When waste is generated, our goal is to reuse and recycle as much as possible.

88.8%

Amount by weight of IBM's nonhazardous waste sent for recycling

Water conservation

The preservation of water resources and the protection of watersheds are important areas of focus for IBM. Our current water use is primarily associated with cooling and humidity control at offices and data centers, domestic consumption at the workplace, fire protection systems for buildings, and landscape irrigation. In 2016, we established our latest water conservation goal: to achieve year-to-year reductions in water withdrawals at larger IBM locations and data centers in water-stressed regions. In 2019, withdrawals at these locations decreased by 2% versus 2018.

Pollution prevention

The best way to prevent pollution is to reduce the generation of waste at its source. The waste that IBM generates is managed through a comprehensive, proactive waste management program. IBM's waste management hierarchy defines our strategic management practice in order of preference as: (1) prevention, (2) reuse, (3) recycling, (4) recovery, (5) other treatment, and (6) land disposal.

IBM's worldwide operations generated 35,700 metric tons of nonhazardous waste in 2019. We separated and sent 88.8% (by weight) to be recycled — surpassing our goal of 75%.

To further minimize our waste, we are working with our cafeteria service providers globally to reduce the amount of plastic used. Single-use plastic items such as straws, cups, cutlery, plates, bags and food containers are being eliminated or replaced with reusable options or more environmentally preferable alternatives. These efforts are currently underway in more than 20 countries. For example, in the United States, we removed 77 plastic items across 15 IBM cafeteria locations, eliminating about 19.5 metric tons of plastic annually.

Solutions for environmental sustainability

Beyond what we do in our own operations to protect the environment, we also work with our clients and partners to develop solutions that address environmental challenges facing our planet and its people. Here are some examples of that work.

Digital farming platform

Yara, a global crop nutrition company based in Norway, is on a mission to responsibly feed and protect the planet by advancing more productive and sustainable agriculture to create a world without hunger. The company is combining its 115 years of agronomic expertise, crop knowledge and modeling capabilities with IBM technology insights from [IBM Watson Studio](#), [IBM PAIRS technology](#), [The Weather Company](#) and other services to bring more knowledge to farmers by building the world's leading digital farming platform. The platform will provide hyperlocal weather forecasts in addition to offering real-time recommendations to farmers tailored to the specific needs of individual fields and crops, helping to increase crop production, save water and decrease the need for fertilizers and pesticides. Learn more at [IBM Services®](#).

AI and sustainable coffee

Besides sunlight, water and soil are a farm's most essential resources, which is why farmers use chemical analysis to test their quality. Knowing what is in their soil allows farmers to better manage water resources and fertilizer usage in an environmentally responsible manner, while maximizing crop production. IBM Research is working with Enveritas, a U.S. nonprofit organization that aims to bring sustainable practices for the economic and social development of coffee farmers around the world, to pilot a study of how the IBM AgroPad could help smallholder coffee farmers save money and improve the sustainability of their operations. AgroPad, a paper sensor read by an AI-powered mobile app, can quickly analyze soil samples for chemical composition. Results can be uploaded to the IBM Cloud, where farmers can monitor the health of their soil and water over time. Learn more at [IBM Research](#).

Transboundary water management

Transboundary water sources — aquifers and watersheds spanning two or more countries' borders — often present management challenges. Upstream overuse can cause shortages downstream, for example, or pollution in one country can impact another's water quality. IBM Research–Africa is working with partners to develop a



The Open Data Exchange, from Yara and IBM, addresses the complexity of today's food system.

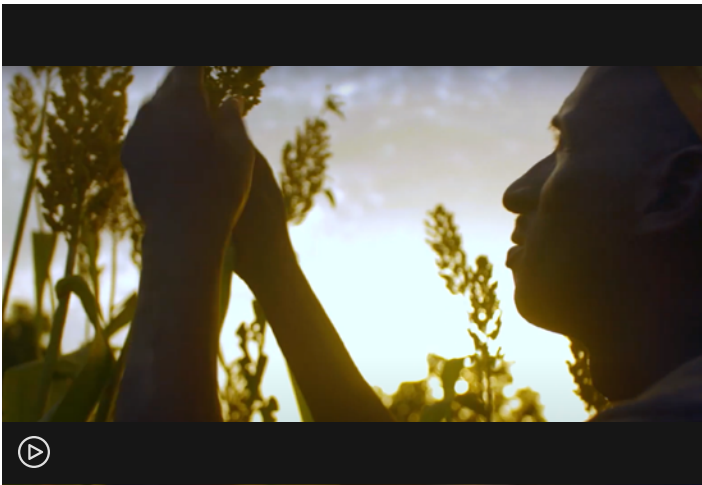


Aquaculture supplies more than half the world's fish consumption.

pilot system for managing transboundary water supplies, starting with the Ramotswa Aquifer between South Africa and Botswana. The goal is better data, improved forecasting and deeper analysis that can help guide decisions on water management locally and regionally. Learn more at [IBM Research](#).

Technology for aquaculture

Farmed fish production, or aquaculture, supplies more than half the world's consumption but has lagged agriculture in its use of technology. A team at IBM Research-Europe is developing an aquaculture management platform that integrates a variety of data sources, processed by AI technology, to offer a real-time view of farm dynamics and provide early warnings on risks. "Our goal is to transition the aquaculture industry from ad hoc decision-making based on heuristics and intuition, to real-time informed decisions backed by AI insights and IoT connectivity," says IBM's Fearghal O'Donncha. "This transition has the potential to greatly reduce operational costs while enhancing fish health and improving sustainability." Learn more at [IBM Research](#).



IBM GRAF helps democratize weather forecasts

IBM Global High-Resolution Atmospheric Forecasting System

Access to accurate and timely weather information can help farmers know when to plant, fertilize, apply pesticides and irrigate. It can also help airlines efficiently route around turbulence and reduce fuel consumption. IBM GRAF, the Global High-Resolution Atmospheric Forecasting System, from The Weather Company, now offers the whole world weather forecasts that update every hour at a 3-kilometer resolution, providing access to information that helps improve decisions for farming and other industries, as well as our everyday lives. Learn more at [The Weather Company](#).

Optimizing solar energy and batteries

Addressing climate change will require a shift to renewable energy sources like solar energy. IBM Research–Australia has partnered with Selectronic (an inverter manufacturer) and Relectrify (a provider of energy storage), funded in part by the State of Victoria, Australia, to learn how batteries, solar panels, inverters, and cloud-based services can be coordinated efficiently to provide the best possible economic returns for users.

In addition, IBM Research has developed an AI-based forecasting and energy control system that maximizes value from battery storage connected to solar photovoltaic systems. Getting the greatest value from battery storage systems requires careful consideration of when to discharge power to the local electric grid and when it may be advantageous to charge batteries from the grid, such as at night when electricity rates may be lower. These decisions must take into account anticipated solar generation, predicted energy demand, and the local electricity tariff structure, and are best done in an automated way, continually analyzing new information (such as updated weather forecasts) as it arrives.

The control system achieves this by combining solar irradiation forecasts via The Weather Company and AI to forecast solar energy generation and optimize battery storage control in a way that is customized to each site. Learn more at [ibm.com](#).

Smarter buildings

The building sector is responsible for nearly 40% of global energy consumption. IBM Research–Australia has developed a Building Energy Analytics for Cooling and Heating (BEACH) solution to reduce the energy consumption and related greenhouse gas emissions associated with operating heating, ventilation and air-conditioning systems in commercial buildings.

BEACH, a cloud-based AI and data-driven integrated framework, captures the temperature dynamics in different sections of a building, taking into account the impact of weather (leveraging The Weather Company), occupancy and other key system parameters. It then provides recommendations, such as when the HVAC system should be started/stopped or how temperature set-points should be adjusted in different sections of the building, so that energy consumption and costs can be kept to a minimum while delivering the desired thermal comfort conditions. BEACH is currently deployed in a large office building located in northern Australia and the results to date demonstrate that cooling energy consumption can be reduced by up to 15% through the use of this solution. Learn more at [IBM Research](#).

Battery breakthrough

Today's batteries often use materials that pose environmental and humanitarian concerns, but an IBM innovation could change that.

In December 2019, IBM Research revealed a new battery chemistry that doesn't require heavy metals such as nickel, cobalt, lead and cadmium. Researchers combined three new, proprietary materials, and the key active material can be extracted from ocean brine pools, potentially offering more sustainable and lower-cost sourcing than heavy metal mining.

The battery's performance potential is also promising. Initial tests proved that it can be optimized to surpass lithium-ion batteries in a number of categories including cost, charging time, power and energy density, energy efficiency, and flammability. The work emerged from the IBM Research Battery Lab at our Almaden Research Center in San Jose, California.

“This new research could help transform the long-term sustainability of many elements of our energy infrastructure.”

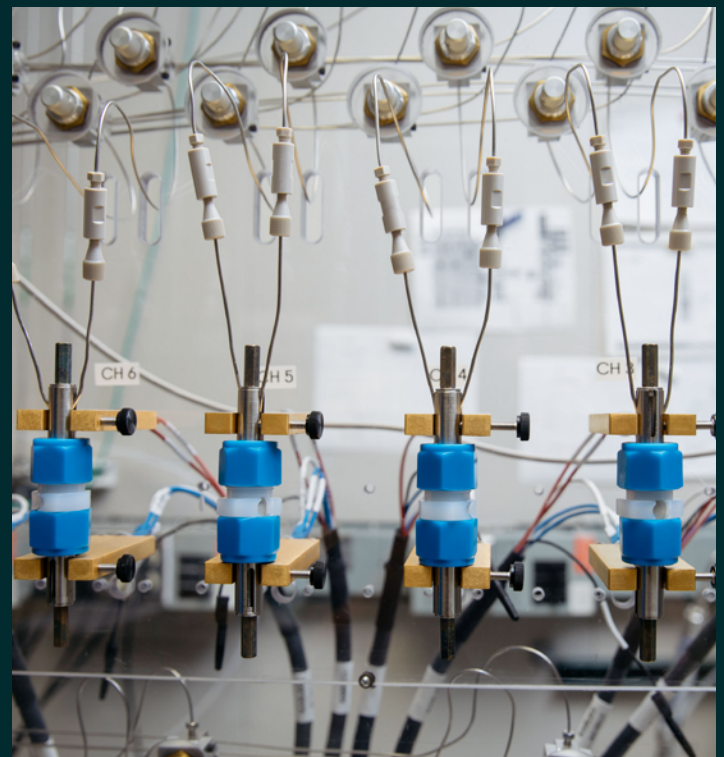
Young-hye Na
IBM Research

The discovery holds potential for electric vehicles, for example, where batteries' flammability, cost and charging time are all important factors. In current tests, the new battery can reach an 80% state of charge (configured for high power) in less than five minutes. Additionally, it can be designed for a long-life cycle, making it an option for smart power grid applications and new energy infrastructures requiring longevity and stability.

A foundation of science

“When we set out to explore solutions for batteries and renewable energy, we drew on IBM Research's strong infrastructure that allows us to study how things work on a molecular and atomic level,” says Young-hye Na, who manages the Advanced Energy Storage Program at Almaden. “This foundation has propelled IBM's leadership in a number of areas.”

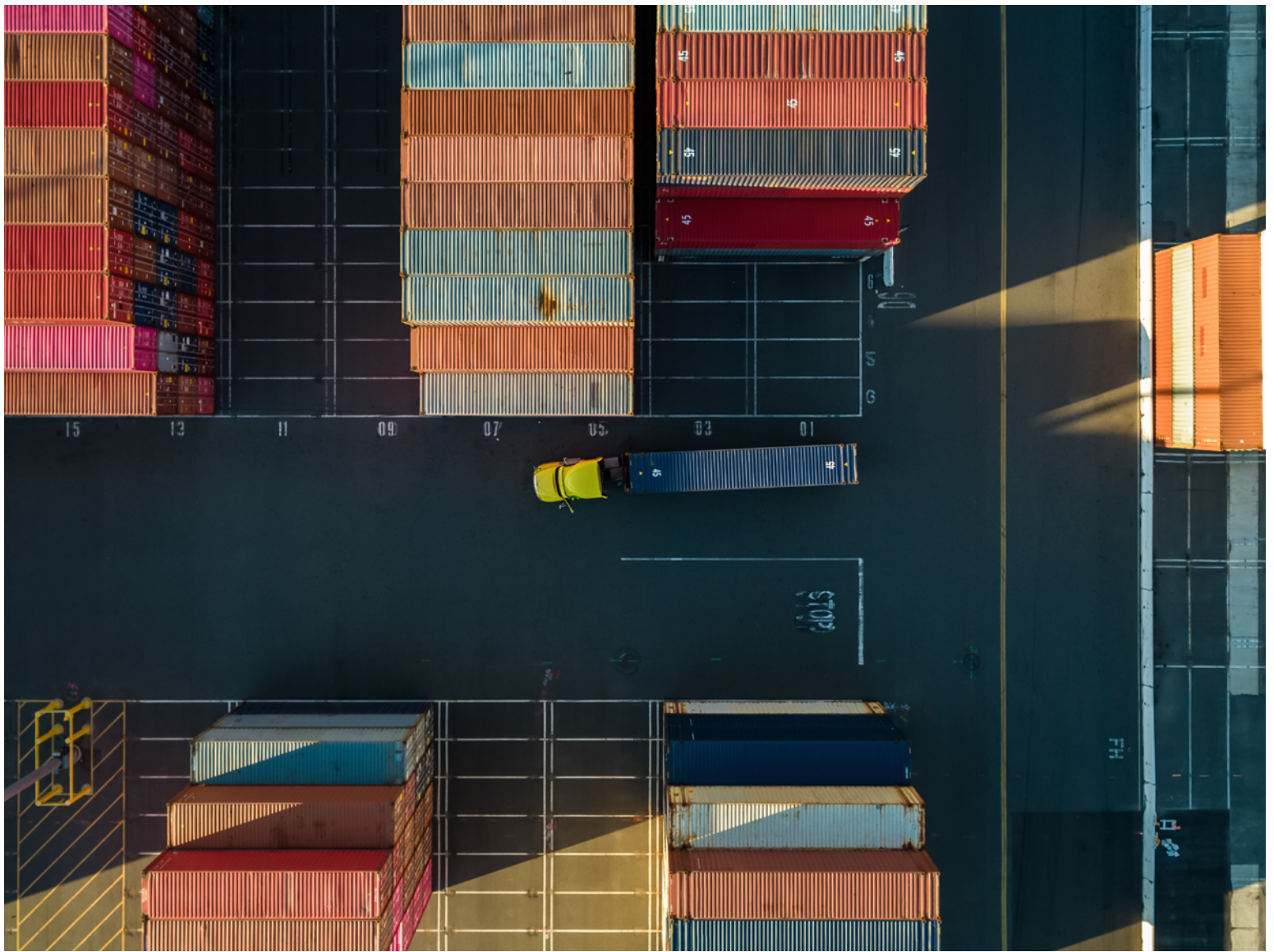
Dr. Na joined IBM in 2007 and initially researched materials for water treatment membranes. She's applied what she learned



Battery tester and cycler at IBM Research

from that work to managing a team dedicated to sustainable battery technologies. Her team has now implemented an artificial intelligence technique called semantic enrichment to identify safer and higher-performance materials, by providing insights from millions of data points to inform researchers' hypotheses and next steps.

IBM Research has joined with Mercedes-Benz Research and Development North America, Central Glass (a battery electrolyte supplier), and Sidus (a battery manufacturer) to develop this innovation toward eventual commercial use. Learn more at [IBM Research](#).



Managing our supply chain responsibly

Social responsibility in a supply chain must be a commitment shared by all companies.

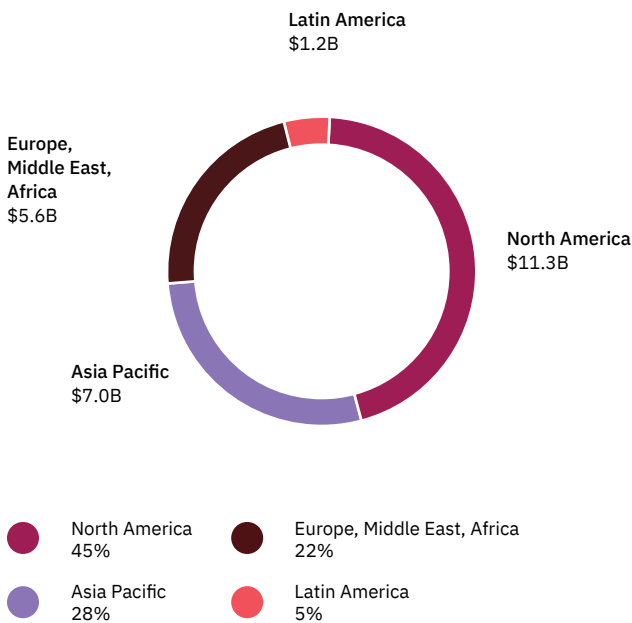
IBM's global spending – \$25.1 billion with more than 12,000 suppliers in 2019 – presents an opportunity to promote our company's values and help drive progress in environmental and social responsibility throughout our supply chain.

Engagement and collaboration

We work with suppliers to establish requirements, communicate the means to address challenges, and assess conformance with the goals and objectives we have established. In parallel, we collaborate with industry groups to improve supply chain responsibility, and we have worked to increase supply chain diversity for over 50 years.

2019 spending by region

IBM spent \$25.1 billion in 2019 with more than 12,000 suppliers in over 100 countries.



Social responsibility is integral to IBM’s procurement strategy, and was further solidified in 2004 when IBM became a founding member of the [Responsible Business Alliance](#). Today, IBM’s operations abide by the RBA Code of Conduct, and we require the same of our direct suppliers in all three of IBM’s procurement categories: production, logistics, and services and general. The RBA has grown to represent a wide range of the supply chain, with over 150 members across a range of industries. IBM has worked tirelessly with other RBA members to ensure that the RBA code has evolved to incorporate many key social responsibility topics, such as human trafficking prevention, worker health and safety, and responsible minerals sourcing. All eight members of IBM’s global Supply Chain Social Responsibility team participate in one or more of the workgroups of the RBA or Responsible Minerals Initiative, helping us to remain engaged and permitting us to contribute to and learn from other companies.

Since 2010, IBM’s Social and Environmental Management System has required that first-tier suppliers create their own systems for managing social and environmental responsibilities within their first year of doing business with IBM. In 2019, 1,550 new suppliers were notified that they would need to submit evidence supporting conformance to these requirements:

- Build and maintain a management system that addresses the intersection of their operations with employees, society and the environment, and complies with the RBA Code of Conduct.
- Measure performance and establish voluntary, quantifiable environmental goals for waste, energy, and greenhouse gas emissions.
- Publicly disclose these goals, results and other environmental aspects of their management systems.
- Conduct self-assessments, audits and senior leadership reviews.
- Cascade these requirements to their next-tier suppliers.

More information on our requirements is available on IBM’s supply chain social and environmental responsibility [webpage](#).

Education and training

Key to our supplier engagement strategy is ensuring that our direct suppliers have access to the education and training needed to understand and comply with the RBA code. In 2019, IBM extended online access to RBA's learning academy courses to a cross-section of our direct suppliers, to help them attain a greater understanding of the importance of the RBA code and how to implement its various aspects into their operations. Additionally, IBM provides suppliers with internally developed materials to augment the RBA training, and consistently expands the universe of IBM suppliers with access to these resources.

External collaboration

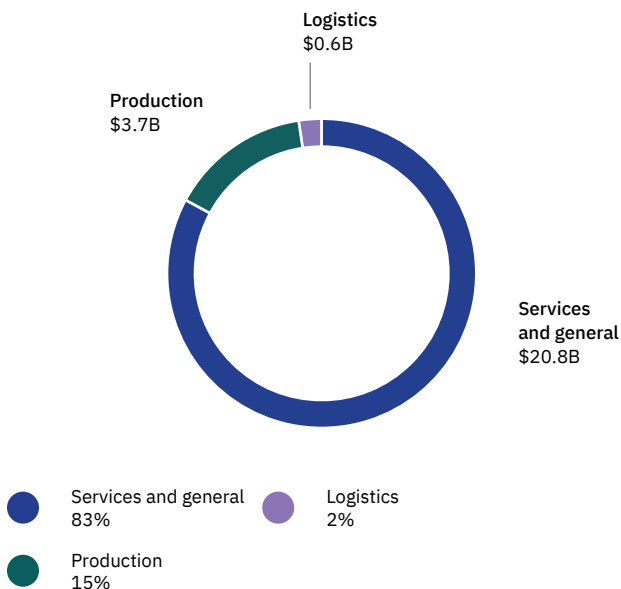
In addition to engaging with our suppliers, IBM collaborates with industry groups, academics, nongovernmental organizations and professional associations, sharing our work and learning from each other to identify ways to improve supply chain social responsibility. We encourage our suppliers to participate as well. For example, as a key member of the electronics industry in Mexico, IBM collaborates with the nongovernmental organization Centro de Reflexión y Acción Laboral, which shares our commitment to a sustainable and responsible supply chain. Together, we are working to try to address mutual concerns regarding working conditions in the supply chain.

Responsibility reporting

IBM encourages its suppliers to report on their social and environmental responsibility efforts and results. Nearly 60% of IBM's top 100 suppliers published corporate responsibility reports in 2019, and 68% of those followed Global Reporting Initiative guidelines. We are encouraged that nearly 25% of our top 100 suppliers also endorsed and mapped the U.N. Sustainable Development Goals in their reporting. We encourage all our remaining suppliers to follow their lead by publishing reports that outline their accomplishments for greater transparency.

IBM's top 50 suppliers in Production and Logistics Procurement, and in Services and General Procurement, are listed in the appendix of this report along with links to their responsibility reports.

2019 spending by category

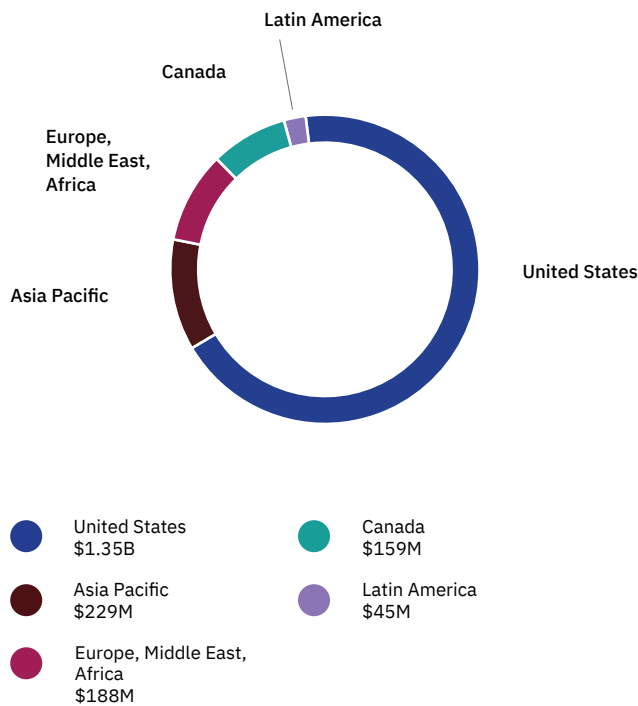


Supplier diversity

IBM established its supplier diversity program over a half-century ago, and diverse suppliers now provide products and services in every IBM procurement category. These suppliers provide value to IBM – but we also believe that supply chain diversity stimulates growth in a global marketplace and drives development in growing economies.

Diverse spending worldwide

IBM spent nearly \$2B directly with first-tier diverse suppliers in 2019.



An independent study of supplier diversity's impact on IBM's revenue determined that it was in excess of \$30 billion annually in the U.S. This evaluation created an impact algorithm to review IBM as a supplier. The research looked at IBM's contracts and proposals with our ultimate clients, and their requirements for IBM to provide specific supplier diversity information as a part of our contractual requirements. It also highlighted the fact IBM has won, and unfortunately lost, contracts dependent on our supplier diversity contractual commitments.

Our program provides opportunities to suppliers that are majority owned and operated by people from a racial or ethnic minority (as defined in each country or region), women, military veterans, LGBT individuals or people with disabilities. Purchasing opportunities are also expanded for nonprofit organizations that hire disabled persons, and for U.S. HUBZone companies. In 2003, IBM began the process of globalizing its supplier diversity program, which is now in effect in the more than 175 countries where we operate.

IBM believes all companies in a business ecosystem should cooperate to expand supply chain diversity, whether as a purchaser or supplier:

- IBM's global second-tier initiative requires our first-tier suppliers to report their own diverse-supplier expenditures. This enables IBM to help diverse-owned businesses to grow and potentially become Tier 1 suppliers to IBM.
- Many of IBM's clients require supplier diversity performance reporting, and IBM submits quarterly spend reports to more than 200 clients that require this in their contracts with IBM.

In 2019, IBM purchased \$2.5 billion in goods and services from diverse suppliers globally (both first- and second-tier). IBM's 2019 spending with first-tier suppliers was nearly \$1.4 billion in the United States and \$621 million in other countries. Since 2000, IBM has conducted more than \$1 billion in business annually with first-tier U.S. suppliers, and more than \$2 billion annually since 2008 with first- and second-tier suppliers worldwide.

Ensuring supply chain responsibility

IBM systematically audits suppliers to ensure they meet our strict standards for environmental and social responsibility. However, simply auditing is not enough. IBM works with suppliers to form corrective action plans when an audit reveals nonconformance, and we continuously update supplier education and training programs to address areas where assessments reveal improvement is needed.

In addition to valuable education opportunities, the RBA provides objective conformance audits of our suppliers' operations, to verify they are properly following the code and determine if they need further improvement. In 2019, 50 of IBM's first-tier suppliers participated in full-scope RBA audits. These audits enable IBM to monitor critical issues such as human trafficking prevention, and to understand where suppliers might need additional support. Since 2004, IBM has driven 2,078 full-scope audits.

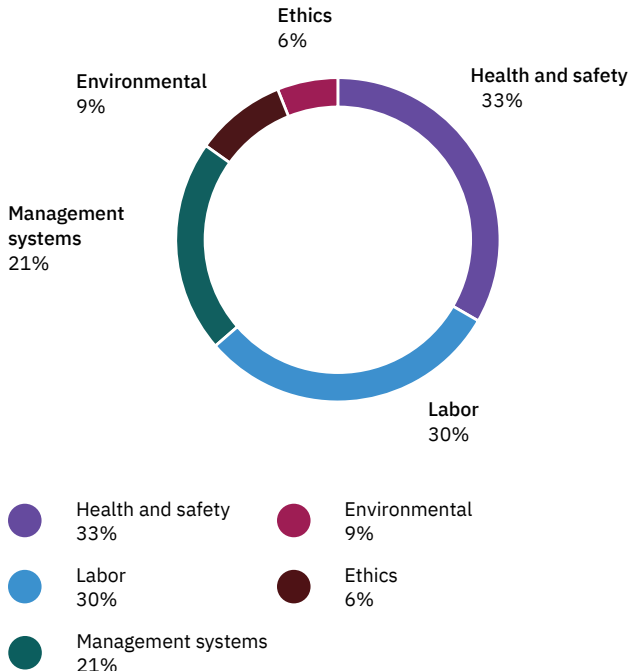
Following an audit, IBM's suppliers create and submit a Corrective Action Plan (CAP) for all nonconformant issues identified in the audit report. IBM's Supply Chain Social Responsibility team engages with suppliers to address the root cause of nonconformance and suggest remedies that have proven beneficial. Further, IBM monitors nonconformant areas and makes changes to its supplier education and communications for future improvements.

IBM maintains a thoughtful cycle of auditing and reauditing to ensure that CAPs demonstratively improve supplier compliance. In 2019, IBM found during full-scope audits that suppliers were not conformant with 47 code provisions. However, upon reaudit, we found that the CAPs helped our suppliers improve across all nonconformant code provisions and fully corrected 12 of the 47 code provisions. Notably, the 10 code provisions with the highest nonconformance showed significant improvement, including working hours (34% improvement), emergency preparedness (86% improvement) and occupational safety (85% improvement).

Additionally, 26% of reaudited suppliers addressed all code compliance issues after completing their reaudit cycle. This significant achievement shows both the value of going through the full RBA process, as well as our suppliers' commitment to investing in lasting improvements. IBM Global Procurement engages closely with suppliers who have outstanding issues following their reaudits to drive substantive change. IBM's procurement executive team reviews supplier audit results monthly, and IBM's Chief Procurement Officer reviews them quarterly.

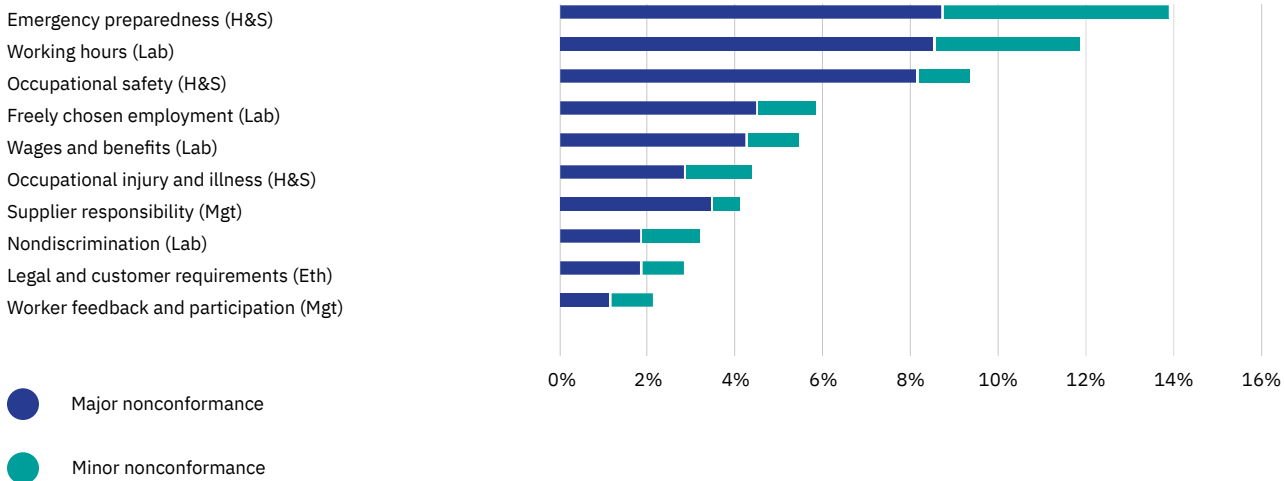
Supplier audit nonconformance

Distribution of nonconformance by RBA Code of Conduct sections in 2019 (50 full audits)



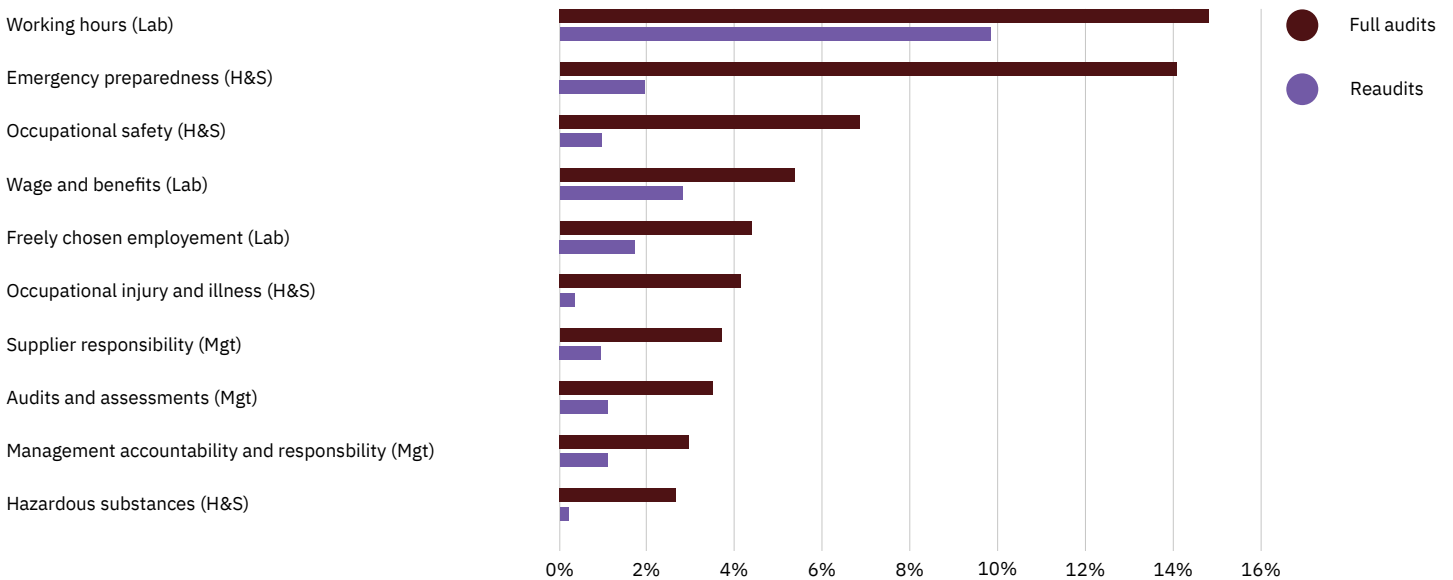
2019 full audit results

2019 top 10 RBA Code of Conduct provisions with rates of nonconformance present across 50 full audits



2019 readit improvements

Improvement in nonconformance rates to RBA Code of Conduct provisions, from full audits to the 47 readits managed in 2019



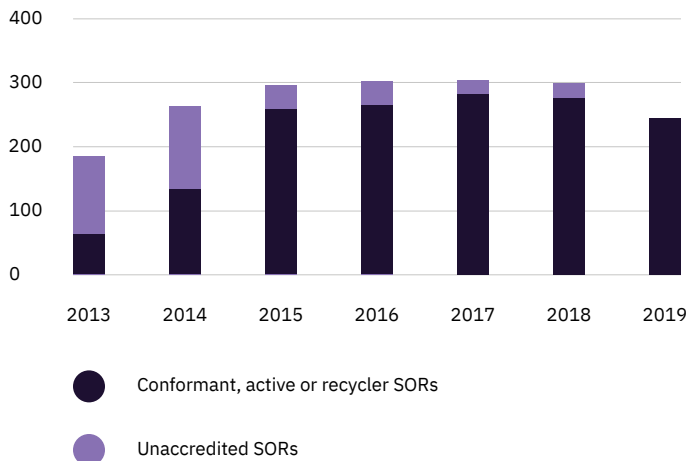
2019 RBA Code of Conduct provisions with 100% improvement from audit to readit

- Food, sanitation and housing (H&S)
- Health and safety communication (H&S)
- Legal and customer requirements (H&S)
- Wastewater and solid waste (Env)
- Corrective Action Process (Mgt)
- Humane treatment (Lab)
- Environmental permits and reporting (Env)
- Company commitment (Mgt)
- Machine safeguarding (H&S)
- Disclosure of information (Eth)
- Intellectual property (Eth)
- Privacy (Eth)

Responsible minerals

IBM has implemented robust policies and industry best practices to ensure that minerals used in IBM hardware products are ethically and responsibly sourced. We are also actively engaged with our suppliers to improve our supply chain continuously.

2013-19 3TG smelter or refiner validation



IBM's Responsible Minerals Policy requires in-scope suppliers to source from SORs conformant or active in a recognized third-party validation scheme such as the RMAP, LBMA, RJC CoC, or Ti-CMC, or from 100% recycled/scrap sources. For more detail on accepted validation schemes and our work in this area, see the 2019 IBM Conflict Minerals Report.

In 2019, IBM updated its Responsible Minerals Policy (formerly IBM's Conflict Minerals Standard) to conform in all applicable aspects to the framework set forth by the Organisation for Economic Co-operation and Development Due Diligence Guidance for Responsible Mineral Supply Chains (third edition). The policy's fundamental changes were the inclusion of Conflict-Affected and High-Risk Areas, Annex II, and related supplements pertaining to downstream companies. IBM's Responsible Minerals Policy and 2019 Conflict Minerals Report are available at IBM's Responsible Minerals [website](#).

The highlight of our efforts in 2019 was our collaboration with our in-scope suppliers of hardware, to source exclusively from responsible and ethical smelters or refiners (SORs). Our in-scope suppliers successfully demonstrated that the 3TG (tantalum, tin, tungsten and gold) supplied to IBM were sourced from SORs accredited by third-party assessment, actively pursuing assessment, or confirmed 100% recycled scrap. Reaching this level of performance required strong partnership with RMI members, field outreach to SORs, progressive levels of education shared with direct and indirect suppliers, and perseverance from IBM Responsible Minerals, procurement professionals, and engineering teams. In 2020, the IBM Responsible Minerals team will focus on advancing the work in this area, which is important to IBM, its customers, and stakeholders.

Additionally, IBM in 2019 added cobalt due diligence to explore the existence of this material in IBM's products. In 2020, we will launch our second cycle of harvesting information on cobalt and use this in collaboration with RMI to drive SORs toward third-party certification.

In the past year, significant progress was made in deploying IBM's blockchain technology in the Responsible Sourcing Blockchain Network (RSBN). In collaboration with numerous leading clients, and responsible assurance from RCS Global, RSBN successfully piloted the tracing and social responsibility assessment of cobalt (from mine to market) used in the production of batteries for electric vehicles. In 2020, RSBN will be developed to production level for cobalt and will add 3TG in the latter part of the year, which will have utility for firms consuming and reporting on use of these materials.

IBM Blockchain battles COVID

The COVID-19 crisis sent many hospitals and government agencies scrambling to find and purchase masks, gowns and other vital medical supplies, often from nontraditional suppliers. Buyers need to assess the credibility of new suppliers quickly, and simplify the process of locating essential items.

Already a leader in blockchain, IBM responded in April 2020 with the launch of Rapid Supplier Connect, a blockchain-based network made available at no cost in the U.S. and Canada through August. The system features a streamlined onboarding process, validation checks and inventory information in nearly real time. Supplier vetting is enabled by Dun & Bradstreet, Project N95 and others. Financial transactions can be secured using a third-party paymaster service.

Initial participants included Northwell Health, New York's largest healthcare provider, and The Worldwide Supply Chain Federation, which onboarded more than 200 American suppliers.

“Creating our own group purchasing organizations and supply chain, and reaching nontraditional suppliers, enabled us to maintain an adequate stockpile of personal protective equipment and other supplies, so we are pleased to join IBM Rapid Supplier Connect.”

Phyllis McCready

Northwell Health Chief Procurement Officer

Learn more at trustyoursupplier.com/rapid-supplier-connect.

Trust Your Supplier

Rapid Supplier Connect is built upon a separate supplier network IBM launched in August 2019 called Trust Your Supplier, developed with blockchain specialist Chainyard. TYS is designed to eliminate manual processes and reduce the risk of fraud and errors in managing supplier information. It provides a blockchain-based “digital passport” that includes suppliers’ regulatory, environmental and health/safety information. This is shared

IBM’s pandemic response includes a secure network to connect healthcare organizations with new sources of critical supplies.

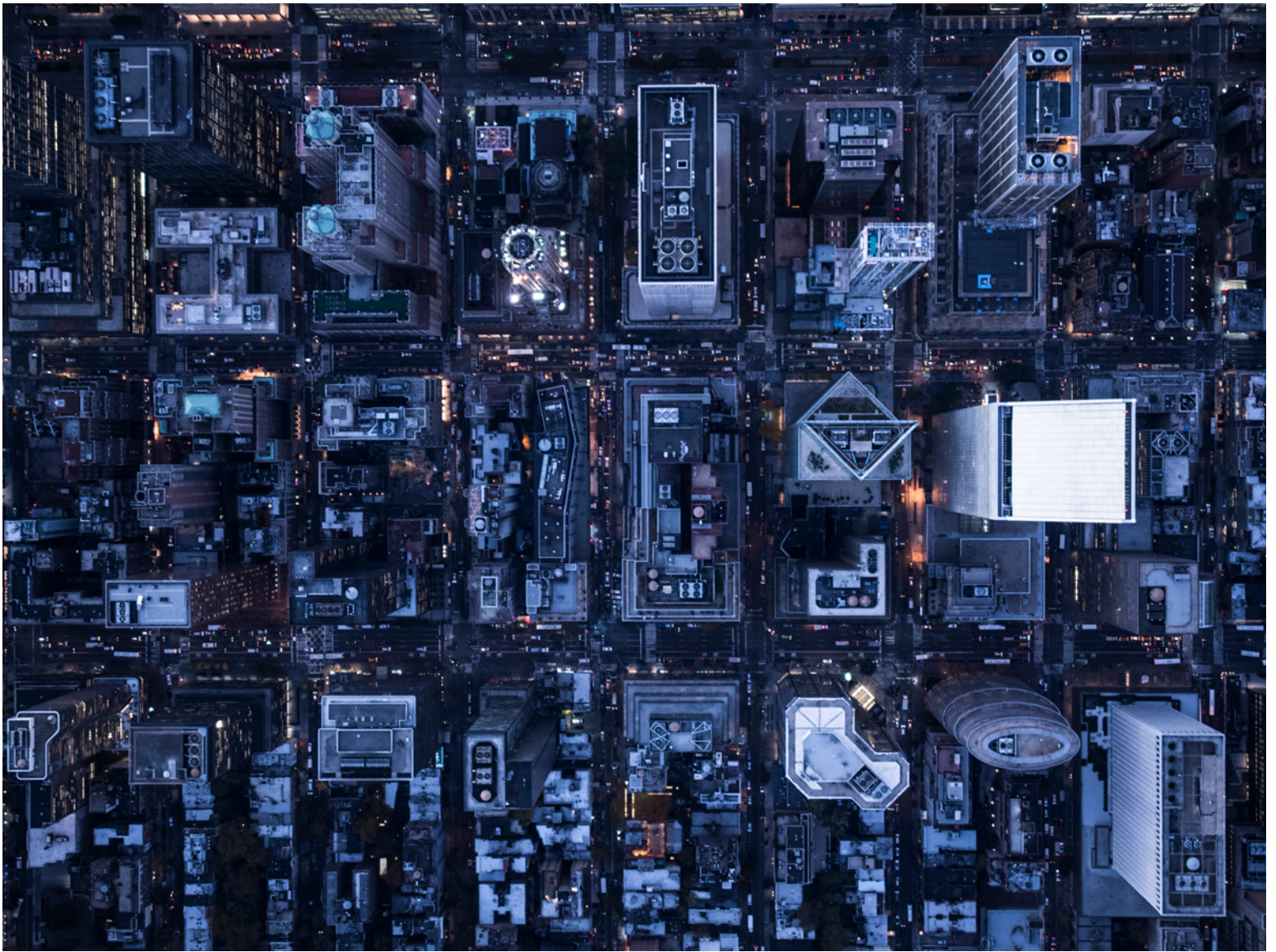
securely with any buyer granted viewing permission, making it easier and cost-effective for buyers to qualify, validate, onboard and maintain suppliers.

“Managing increasingly complex supplier networks requires better collaboration — for better business and a better world,” says EcoVadis Co-CEO Pierre-Francois Thaler. “We’re thrilled to be part of this solution, helping to verify and improve the sustainability and CSR practices of network participants.”

Besides IBM, founding TYS participants include Anheuser-Busch InBev, Cisco, GlaxoSmithKline, Lenovo, Nokia, Schneider Electric and Vodafone. Third-party validators including Dun & Bradstreet, EcoVadis and RapidRatings provide outside verification or audit capabilities — including information on ethics, compliance and other sustainability issues.



Protective equipment supplies have been critical to the pandemic response.



Maintaining rigorous governance practices

At IBM, corporate governance principles are transformed into best practices.

The IBM Board of Directors has long adhered to governance principles designed to ensure the continued vitality of our company. IBM's senior management further utilizes strong governance practices to ensure that the company's risks and opportunities are effectively assessed and managed.

ESG management system

IBM's dedication to economic, environmental and societal performance and leadership is an integral part of the company's long-term performance strategy. The Board, in conjunction with the appropriate committees, has oversight responsibility for each of these areas.

IBM Board of Directors

The Board has overall responsibility for ESG oversight, while its committees' responsibilities include specific ESG-related oversight, such as:

Executive Compensation and Management Resources Committee

- Human capital management
- Diversity and inclusion

Audit Committee

- Cybersecurity
- Ethics and compliance

Directors and Corporate Governance Committee

- Protection of environment
- Corporate social responsibility and social impact contributions

Under the guidance and supervision of the Board of Directors, IBM senior management is responsible for the company's environmental and social performance. Two key groups help to ensure corporate responsibility is integrated across the business:

- The Corporate Responsibility Executive Steering Committee provides leadership and direction on key corporate responsibility issues. Chaired by the Vice President for IBM Corporate Social Responsibility, the committee meets monthly and includes senior executives from functional areas across IBM, each responsible for developing its own corporate responsibility goals and strategy. Organization-wide goals are approved by this committee.
- The Corporate Responsibility Working Group manages IBM's corporate responsibility activities and stakeholder engagement. It includes representatives from functional areas across IBM and meets at least monthly to review key policy and strategic issues, and make recommendations to the Corporate Responsibility Executive Steering Committee. IBM's Corporate Social Responsibility function, which reports to the chief communications officer, coordinates day-to-day CSR-related activities.

Enterprise Risk Management

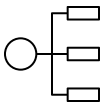
IBM believes that innovation and leadership are impossible without taking risks. We also recognize that imprudent acceptance of risk, or the failure to identify and mitigate risks appropriately, could impact stakeholders.

A culture of risk awareness

The IBM Risk Management Framework aligns to industry standards and good practices, supported by a strong, risk-aware culture:



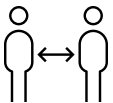
Leadership establishes clear roles and responsibilities, and engages in enterprise-level forums.



Practices are systematically applied to assess, prioritize and respond appropriately to risks.



Investments in training and tools, plus coaching and communication, help to better manage risk capabilities.



Actions to manage risks are developed, measured, and monitored for effectiveness.

We have put in place a consistent, systemic and integrated approach to Enterprise Risk Management (ERM) designed to identify, mitigate and manage significant risks throughout the company. The ERM function looks across organizational silos and develops a holistic view of risks at an enterprise level. It brings an outside-in perspective and performs a cumulative assessment of enterprise risks across the entire organization. Finally, the program assesses the interdependencies between risks, and collaborates with risk owners to optimize actions across entities.

Risk management and governance structure

Risk management is integrated into the organization's governance, with the board responsible for risk oversight and management responsible for day-to-day risk management.

The board is responsible for overseeing management in the execution of its responsibilities and for assessing IBM's approach to risk management. The Board exercises these responsibilities regularly as part of its meetings and also through the Board's three committees, each of which examines various components of enterprise risk as part of their responsibilities.

- **The Audit Committee** continuously reviews financial and audit risks identified through IBM's enterprise management framework.
- **The Executive Compensation and Management Resources Committee** is responsible for assessing risks relating to IBM's compensation programs and employee engagement as an indicator of company culture, as well as diversity and inclusion and IBM's evolving demands for talent.
- **The Directors and Corporate Governance Committee** oversees risks associated with government and industry regulations, as well as corporate social responsibility, sustainability, environmental and other societal and governance matters.

IBM's senior management is responsible for assessing and managing IBM's various exposures to risk on a day-to-day basis, including the creation of appropriate risk management

programs and policies. Management regularly reports to the Board and the committees on a variety of risks. Formal senior-level, cross-enterprise governance forums are in place to ensure the consideration of risk, actions, and metrics are given required focus, for example:

- **The ERM Executive Council** includes 18 senior leaders, representing different business units and global functions, and meets regularly to foster collaboration and transparency. Participants share risks and mitigating actions so that the council can effectively manage risk across the enterprise.
- **The Risk, Integrity and Controls Committee** includes representatives from IBM's Business Controls, Trust and Compliance, Risk, and Internal Audit organizations. It shares relevant learning and experience and coordinates activities to enable IBM to mitigate current and emerging compliance risks promptly, effectively and efficiently.
- **A Financial Risk Management Board**, comprising IBM's CFO and other senior leaders in finance, reviews core and emerging financial and operational risks for the company.

Key initiatives and priorities

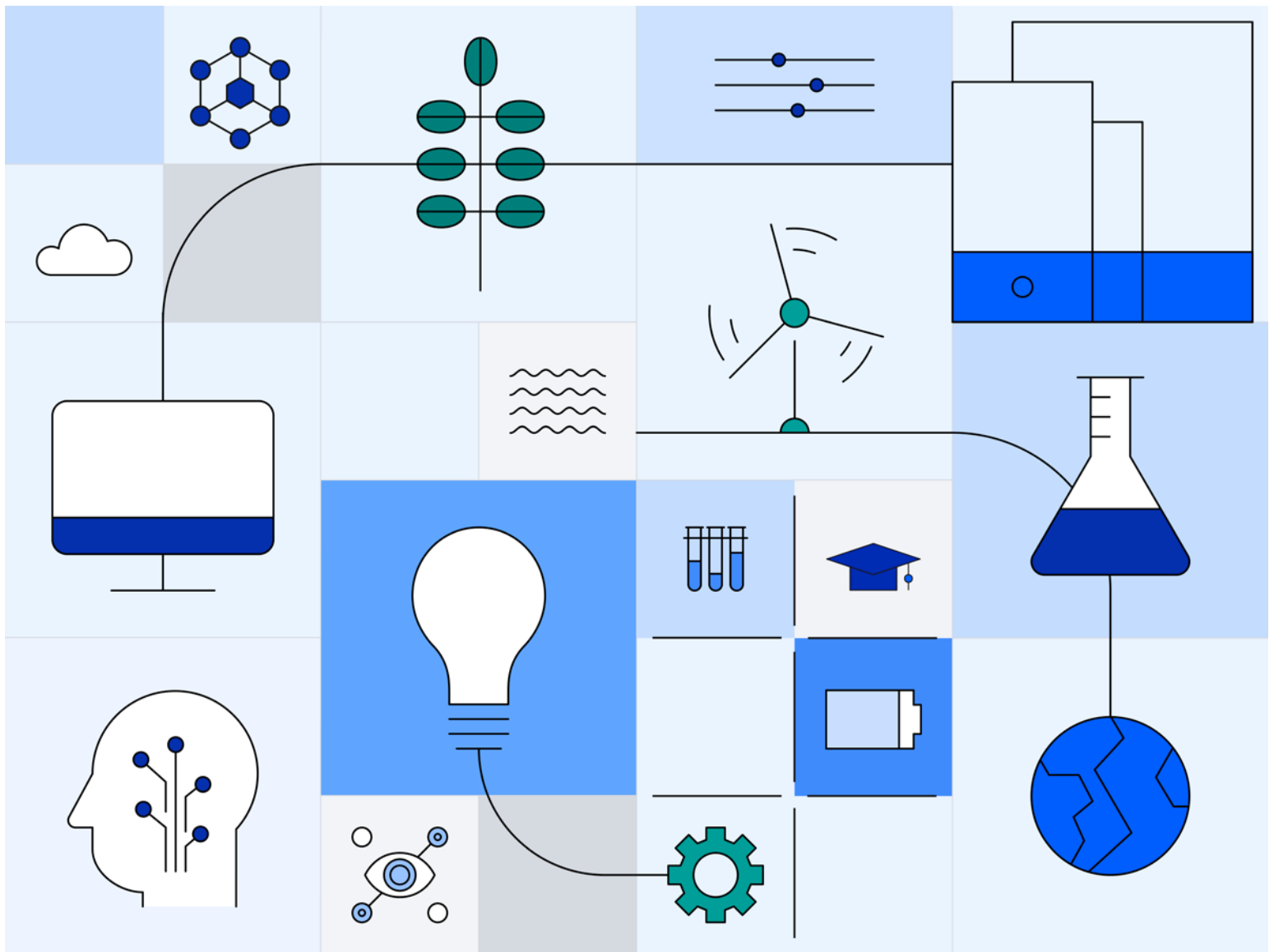
We conduct external research and hold in-depth discussions with leading consultants on emerging risks, and conduct robust internal studies that include polling, surveys and interviews with senior executives. In 2019, we held a Design Thinking session with leaders from our Market Development and Insights organization to increase the focus on identifying emerging strategic market risks. We are continually reviewing and updating our enterprise-level risk map and refining the risk management focus for our senior management.

The program continually assesses emerging risks and promotes proactive steps across businesses and geographies, including risks resulting from the evolving regulatory environment, operations, the financial environment, and strategic planning and execution. IBM's ERM processes also include the identification and management of environmental and climate-related risks. See the environment

section of this report for more, along with information about our objectives for energy conservation and other environmental performance indicators.

Analytics and cognition are essential technologies for risk management, infusing insight into the process when combined with big data. Our Country Financial Risk Scorecard identifies emerging risk areas and alerts leadership. This tool enhances our global country and regional leaders' risk awareness and our ability to improve local resiliency to risks. We continually seek to improve the content, visualization and prediction of future risk scores in the tool to drive higher value to country CFOs. In addition, ERM and IBM Research have developed the Scenario Planning Advisor, a cognitive tool that combines human domain knowledge with machine reasoning and planning to project a wide range of scenarios and emerging risks. We are working to enable the cognitive tool to ingest data from published sources to extract causal relationships between events, as well as enhance the identification of emerging risk-related events from curated news sources.

Finally, community engagement helps advance the risk management knowledge of our current and future business leaders. For example, IBM participated on four councils in 2019, including advisory board memberships for two university ERM initiatives. We also led a peer-group council and delivered presentations on contemporary risk best practices at industry events.



ESG metrics and U.N. Sustainable Development Goals

In this report, we disclose our environment, social, and governance (ESG) policies and metrics, as well as the many achievements we made to further our foundation of trust and responsibility. We consider the following voluntary reporting frameworks and initiatives as part of this effort, and are supportive of their respective missions: [The Global Reporting Initiative \(GRI\) Standards](#); [The Sustainability Accounting Standards Board \(SASB\)](#); [The United Nations Sustainable Development Goals](#).

Each of these frameworks and initiatives recommends disclosing policies and material metrics related to ESG topics. However, the concept of materiality is defined differently under these reporting frameworks and we do not attempt to formally reconcile the divergent uses of the term “materiality” by these frameworks.

Environment

IBM has worked to improve the efficiency of our operations and protect our environment for future generations.

	2015	2016	2017	2018	2019	GRI	SASB
Energy and climate change							
Energy conservation as % of total energy use (goal 3%)	6.1	4.8	3.6	3.3	3.2	GRI 302-4	
IBM total energy consumption in megawatt-hours	4,896,386	4,912,714	4,845,695	4,666,514	4,455,752	GRI 302-1	TC-SI-130a.1
Renewable electricity procurement as % of total electricity consumption (goal 55% by 2025)	32.7	37.0	39.0	37.9	47.0	GRI 302-1	TC-SI-130a.1
CO ₂ emissions reduction as % of 2005 baseline CO ₂ emissions (goal 40% by 2025)	22.6	29.2	30.1	32.2	39.7	GRI 305-5	
IBM total operational CO ₂ emissions in metric tons	1,569,421	1,436,464	1,417,985	1,375,027	1,221,969	GRI 305-1; 305-2	

Note: Energy and emissions goals and reporting cover all activities taking place in IBM-owned or leased facilities. These facilities include co-location data centers. Renewable electricity procurement includes contracted purchases and renewable electricity which automatically comes to IBM via routine grid power. CO₂ emissions reduction data is adjusted for acquisitions and divestitures.

Water conservation

% annual reduction in water withdrawals at data centers and other large IBM locations in water-stressed regions	*	6.6	2.9	0.4	2.0	GRI 303-3	TC-SI-130a.2
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*Our latest goal was established in 2016.

Nonhazardous waste recycling

% by weight sent for recycling (goal 75%)	85.2	86.3	87.8	89.5	88.8	GRI 306-2	
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Product reuse and recycling

% by weight of total IT product waste sent by IBM's product end-of-life operations to landfill or incineration for treatment (goal not to exceed a combined 3% by weight)	0.7	0.6	0.7	0.7	0.8	GRI 306-2	
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Product energy efficiency

Discussion of IBM product energy efficiency goals and results						IBM and the Environment Report	GRI 302-5
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Integration of environmental considerations

Discussion of the integration of environmental considerations into strategic planning for data center needs						IBM and the Environment Report	TC-SI-130a.3
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Social

IBM has fostered a culture in which our people know they can bring their best selves to work, and continues to invest in skills and re-skilling to make the digital era more inclusive.

	Female	Male	GRI	SASB
Percentage of gender representation 2019				
Overall	33.3	66.7	GRI 405-1	TC-SI-330a.3
Management	28.5	71.5		TC-SI-330a.3

Note: Global, management defined as all executives and people managers.

	Asian	Black	Hispanic	GRI	SASB
Percentage of racial/ethnic group representations 2019					
Overall	18.3	6.8	6.0	GRI 405-1	TC-SI-330a.3
Management	15.8	4.9	5.0		TC-SI-330a.3

Note: U.S. only, management defined as all executives and people managers.

	2015	2016	2017	2018	2019	GRI	SASB
Learning							
Per capita investment (\$)	1,281	1,339	1,180	1,205	1,321		
Total hours worldwide (M)	25.0	26.7	23.7	24.1	29.0		
Hours per employee	58.3	56.0	59.0	61.0	77.0		
Investments worldwide (\$M)	484	498	425	419	452		

Global illness/injury rate							
Total per 100 employees	0.33	0.30	0.25	0.28	0.26	GRI 403-2	

Volunteering							
Worldwide retiree/employee hours (K)	1,195	1,248	1,205	1,322	1,250		

	2015	2016	2017	2018	2019	GRI	SASB
Contributions by type (\$M)							
Technology	109.5	171.7	229.3	287.4	629.8		
Services	60.0	44.3	66.6	72.2	62.0		
Cash	35.5	41.8	36.6	33.2	37.1		
Total	205.0	257.8	332.5	392.8	728.9*		

Contributions by issue (\$M)							
Education	154.8	208.4	291.7	349.6	708.1		
Human Services	18.6	15.9	15.2	16.6	8.2		
Health	3.6	5.2	9.8	11.1	5.3		
Culture	3.4	4.0	4.0	2.5	3.3		
Environment	0.6	3.5	2.7	3.2	1.8		
Other	23.9	20.8	9.1	9.8	2.2		
Total	205.0	257.8	332.5	392.8	728.9*		

Contributions by region (\$M)							
North America	65.4	99.2	132.2	139.1	235.3		
Asia Pacific	42.6	39.3	52.1	77.8	160.0		
Europe, Middle East, Africa	82.2	104.2	118.3	140.1	279.3		
Latin America	14.8	15.1	29.9	35.8	54.3		
Total	205.0	257.8	332.5	392.8	728.9*		

*Reflects year-to-year increase of approximately \$350M in IBM Academic Initiative software contributions reported in Education, Technology and across all regions.

	2015	2016	2017	2018	2019	GRI	SASB
Supplier spending by category (\$B)							
Services and general procurement	20.3	20.3	20.0	21.1	20.8		
Production procurement	4.7	3.8	4.2	4.2	3.7		
Logistics procurement	0.8	0.6	0.6	0.5	0.6		
Total (\$B)	25.8	24.7	24.8	25.8	25.1	GRI 102-9	

Supplier spending by region (\$B)							
North America	10.8	10.6	10.6	11.2	11.3		
Asia Pacific	8.0	7.3	7.5	7.7	7.0		
Europe, Middle East, Africa	5.8	5.6	5.5	5.8	5.6		
Latin America	1.2	1.2	1.2	1.1	1.2		
Total (\$B)	25.8	24.7	24.8	25.8	25.1	GRI 102-9	

First-tier supplier spending							
Total U.S. (\$B)	9.3	9.7	9.9	10.3	10.1		
Diverse U.S. (\$B)	1.3	1.3	1.4	1.4	1.4		
Diverse non-U.S. (\$M)	718	744	657	710	621		

Governance

IBM has upheld our ethical imperative to prepare society for the changes emerging technologies may bring, by ushering powerful new technologies into the world responsibly and with clear purpose.

	2019	GRI	SASB
Data security and business continuity			
Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards			TC-SI-230a.2
Description of business continuity risks related to disruptions of operations	IBM Business Continuity		TC-SI-550a.2
Data privacy			
(1) Number of law enforcement requests for user information, (2) number of users whose information was requested, (3) % of requests resulting in disclosure	IBM Cloud 2019 Law Enforcement Requests Transparency Report A Letter to Our Clients About Government Access to Data		TC-SI-230a.4
Total amount of monetary losses as a result of legal proceedings associated with user privacy	A summary of the more significant legal matters involving the company can be found at: IBM Quarterly Report on Form 10-Q		TC-SI-220a.3
Description of policies and practices relating to behavioral advertising and user privacy	IBM Privacy Statement IBM's Principles for Trust and Transparency	GRI 418-1	TC-SI-230a.1
Intellectual property protection and competitive behavior			
Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	A summary of the more significant legal matters involving the company can be found at: IBM Quarterly Report on Form 10-Q		TC-SI-520a.1

U.N. Sustainable Development Goals

Adopted in 2015, the 17 U.N. Sustainable Development Goals (SDGs) establish a framework to build an inclusive and sustainable world and provide an opportunity for IBM to build upon its collaboration with stakeholders from a cross section of communities, governments, and the social sector. IBM is uniquely positioned to contribute toward the achievement of the 17 SDGs through the proactive management of the company's internal operations and supply chain, corporate social responsibility programs, diversity and inclusion practices, and most importantly, the IBM products, solutions, and services that IBM offers to clients. A comprehensive look at IBM's contributions to the U.N. Sustainable Development Goals can be found [here](#).



Products, services and solutions

Safer food chains, smarter agriculture, improved water management, faster drug development – these are just a few of the goals that technologies such as artificial intelligence and the Internet of Things are helping to achieve. Whether through partnerships with social organizations or by collaborating with innovative clients, IBM is helping to enable a wide range of solutions designed to improve lives. This includes:

- Watson Decision Platform for Agriculture, which is providing AI-driven insights for the agriculture ecosystem to support greater food quality and sustainability.
- The United Nations Development Programme is working with IBM Research to apply the latest advances in AI, text analysis and machine learning to automate this rapid integrated assessment and help countries develop more sustainably.



Workplace diversity and inclusion

IBM's workforce diversity and inclusion programs are helping to promote fairness and equality. Diversity and Inclusion Executive Councils, led by IBM's most senior leaders, are creating an equal opportunity workforce that celebrates diversity, inclusion and innovation, and more than 250 employee-led Business Resource Groups bring together IBMers from over 50 countries around a shared interest in equality.



Environmental programs

IBM's environmental initiatives align with the U.N. SDGs, ranging from our programs to conserve energy, water and other resources; to our commitments to source renewable electricity; to the way we design our products to be reused, recycled and disposed of properly at the end of their useful lives; to how we prevent pollution from our operations.



Supply chain

IBM addresses the environmental and social responsibility aspects of the company's global supply chain, which includes more than 12,000 members. The company maintains a robust supplier diversity and responsibility program:

- IBM's direct suppliers are required to comply with the Responsible Business Alliance Code of Conduct.
- IBM spent nearly \$2 billion in 2019 with global diverse first-tier suppliers.



Social impact

Social impact is built into our business. We apply our technology and talent to make a positive impact — through our operations, in our practices and by taking clear stands on issues that matter. This approach, in which technology is used to benefit society, builds on the legacy of IBM's leadership in social responsibility. That's what #GoodTechIBM means.

- 220 P-TECH schools across 24 countries with 600 industry partners.
- Hundreds of millions in global contributions, including technology and IBMers' time, invested annually to address the world's greatest challenges.
- More than \$800 million dedicated annually to advancing education and skills initiatives.

Awards and recognition

Publications, advocacy groups, governments and nongovernmental organizations rate and recognize IBM every year for our corporate responsibility efforts worldwide. Below are highlights of our recognition from 2019 and early 2020.

CIO

CIO 100

Ethisphere

World's Most Ethical Companies (2019 & 2020)

Forbes

The Just 100: America's best corporate citizens (2019 & 2020)

Fortune

Most Admired Companies (2019 & 2020)

Change the World

Corporate social responsibility

- *CommonWealth Magazine* (Taiwan) – Excellence in Corporate Social Responsibility Award (foreign company category)
- *Corporate Secretary* magazine – 2019 Corporate Governance Award for Best Shareholder Engagement
- *CR Magazine* – 100 Best Corporate Citizens
- Dow Jones Sustainability Index, North America
- EcoVadis – Platinum-level CSR rating
- European DatSci & AI Awards – Best Use of Data to Achieve Social Impact Award, for Traffik Analysis Hub
- Insight into Diversity – Inspiring Programs in STEM Award, recognizing P-TECH

Environment

- Business Intelligence Group – Sustainability Initiative of the Year Award, recognizing “Forecast: Change” from The Weather Company
- Center for Climate and Energy Solutions and The Climate Registry – 2019 Climate Leadership Award for Excellence in Greenhouse Gas Management Goal Setting
- City of Austin, Texas – Austin Green Business Leaders Program, platinum level for IBM’s Austin facility
- Colorado Department of Public Health and Environment – Gold Leader in the Environmental Leadership Program for IBM’s Boulder facility
- Hong Kong Environmental Campaign Committee – Class of Excellence Wastewi\$e Label
- International Business Awards – 2019 Bronze Stevie Award to IBM India for Health, Safety and Environment Program of the Year in Asia, Australia and New Zealand
- Mexico Federal Environmental Protection Agency (PROFEPA) – Clean Industry recertification for IBM Guadalajara, Mexico
- RECYC-QUÉBEC – ICI on recycle + program, elite-level certification for IBM Canada’s Bromont facility
- United Nations Sustainable Development Goals 2019 Action Award – Connectors category award, citing Plastic Bank’s use of IBM Blockchain technology for reducing ocean plastic
- Web Marketing Association – 2020 Internet Advertising Competition Award for Best Environmental Online Campaign, recognizing “Forecast: Change” from The Weather Company

HR/diversity

- AnitaB.org – Top Companies Leader
- Australia Network on Disability – First on the Access and Inclusion Index Benchmark 2018-19
- Canadian HR Awards – Finalist for 2019 Mercer Award for Excellence in Diversity and Inclusion
- *EHS Today* magazine – America’s Safest Companies 2019
- Glassdoor – Five Companies Committed to Supporting Women in the Workplace
- *Hispanic Executive* magazine – 100 Most Influential Leaders in Tech list included four IBMers
- *Hispanic Network* magazine – Best of the Best Companies for Hispanics
- Human Rights Campaign – Best Places to Work for LGBTQ Equality, with a 100% rating on the Corporate Equality Index (2019 & 2020, 17 consecutive years)
- Hungarian Ministry of Human Capacities – Family-Friendly Workplace Award for initiatives supporting employees with children
- Mediacorp and The Globe and Mail (Canada) – Canada’s Best Diversity Employers (2019 & 2020)
- Military Friendly – Military-Friendly Employer (No. 4, 2020)
- MosaiQ (Romania) – LGBT Employer of the Year
- National Association for Female Executives – NAFE Top 10 Best Companies for Executive Women (Top 10 and Hall of Fame)
- *Nikkei Women* magazine (Japan) – Best 100 list of companies for women
- OFA Nonprofit (Hungary) – Responsible Employer Special Award
- Ontario Workplace Safety and Insurance Board – IBM Canada received a rebate of more than CA\$1 million for workplace safety efforts
- Potega Mocy (Poland) – Award in the Power of Visionary category to IBM’s Women in Business group, recognizing its “Let’s Stay in Touch” program
- Quebec Commission for Standards, Equity, Health and Safety at Work – Innovation Award (large business category) to IBM Canada’s Bromont facility
- Singapore Workplace Safety & Health Council – BizSAFE STAR recertification for IBM Singapore
- Three Princes, Three Princesses Foundation (Hungary) – Family-Friendly Company Award
- UNICEF Slovakia – Family-Friendly Employer (inaugural award)
- *Winds of Change* magazine – Top 50 Workplaces for Indigenous STEM Professionals
- Women’s Leadership Forum (Russia) – Best Work/Life Integration Award to IBM’s Women in Business group
- Work With Pride (Japan) – Gold ranking on Pride Index (fourth consecutive year)
- Workplace Pride – LGBTI Advocates Award to IBM’s Eagle Business Resource Group
- Working Mother and Avtar (India) – Top 10 Best Companies for Women in India (fourth consecutive year)
- *Working Mother* magazine – 100 Best Companies (Top 10), Diversity Best Practices Inclusion Index (Top 10%), Best Companies for Multicultural Women (Top 10), and Best Companies for Dads

Supply chain

- Black EOE Journal – Top Supplier Diversity Program, Top LGBTQ-Friendly Company, and Top Employer lists
- Chartered Institute of Procurement & Supply – Shortlisted in the Supply Management Awards (supplier diversity category)
- Disability:IN – Advocate of the Year to IBM’s Michael Robinson
- Eaton Corporation – Appreciation Award to IBM’s Andrea Fimian for helping them grow their supplier diversity program in EMEA
- European Diversity Awards – Shortlisted for Supplier Diversity Programme of the Year
- *Forbes* – Best Employers for Diversity (2019 & 2020), and America’s Best Employers for New Grads
- *Hispanic Network Magazine* – Top Supplier Diversity Program list
- *Minority Business News USA* magazine – Best of the Decade in Supplier Diversity (2020)
- *Minority Business News USA* magazine – Corporate Buyers of the Year list included five IBMers
- *Minority Business News USA* magazine – All Stars of Supplier Diversity list included six IBMers
- MSD China – Top Corporation of the Year
- National Business Inclusion Consortium – Best of the Best Corporations
- New York & New Jersey Minority Supplier Development Council – Outstanding contribution and continued commitment to the council
- OMNIKAL – Omni50 list of America’s Top 50 Organizations for Multicultural Business Opportunities (No. 4 in 2019, No. 5 in 2020)
- *Statista and Forbes* magazine – America’s Best Employers for Diversity
- *Professional Woman’s Magazine* – Top Supplier Diversity Program, Top LGBTQ-Friendly Company, and Top Employer lists
- *U.S. Veterans Magazine* – Included among Top Supplier Diversity Programs for veteran-owned businesses
- VIQTORY – Top 10 Military Friendly Program
- WEConnect India – Corporation of the Year
- WEConnect International – Top Global Champions for Supplier Diversity and Inclusion (No. 2 in 2019, No. 1 in 2020), and recognized IBM’s Michael Robinson as a “Champion of Supplier Diversity in South Africa”
- Women Business Enterprises Canada – Recognized IBM as a founding member of WBE Canada, and for our continued support of women’s supplier diversity
- Women Presidents’ Educational Organization – WPEO-NY recognized IBM for outstanding support of women-owned businesses and continued commitment to the council (2019 & 2020), and gave IBM a “Done Deal” award recognizing our 2018 spending with 14 certified WPEO-NY members
- Women’s Business Enterprise National Council – Top Corporation Hall of Fame member (2019 & 2020)
- *Women’s Enterprise* magazine – Best of the Decade list
- *Women’s Enterprise USA* magazine – Outstanding Men of 2020 list included IBM’s Michael Robinson
- Women’s IT Network – IT Women of the Year list included IBM’s Andrea Fimian for outstanding commitment to diversity

Top suppliers

IBM's Production and Logistics Procurement suppliers support our hardware brands and product distribution operations, while Services and General Procurement suppliers support client services, software offerings, and internal operations. Below are lists of IBM's top 50 suppliers in each category in 2019, with links to their corporate responsibility reports if available. (Click on a company name to go to its report.)

Production and Logistics

These 50 firms represent 90% of IBM's spending in this category.

Acbel Polytech	Pontocom
Advantech	Redsis
Amphenol	Samsung
Artesyn	Seagate
BDT Media Automation	SK hynix
Broadcom	Super Micro Computer
Celestica	Teleplan
Cisco Systems	Toshiba
Delta Electronics	Trenton Systems
DHL	UPS
FedEx	Western Digital
Finisar	Wistron
Flextronics	Zollner Elektronik
Fuji Electric	
Fujifilm	
Fujitsu	
Geodis	
GlobalFoundries	
Hon Hai	
i3 Technologies	
Intel	
Iron Mountain	
Jabil Circuits	
Kyocera	
Lenovo	
Marvell Technology Group	
Mellanox Technologies	
Mercury Corporation	
Micron Technology	
Molex	
NABS	
NEC Platform Technologies	
NetApp	
Nippon Express	
Nvidia	
Panalpina	
Pentair	

Services and General

These 50 firms represent 46% of IBM's spending in this category.

Adecco	Red Hat
Akamai Technologies	Rocket Software
Amazon Web Services	SAP
American Express	SDI International
Apleona	Servicenow
Altran	SHI International
Artech Info Systems	Sumitomo Corporation
AT&T	Tech Mahindra
BMC Software	The Employment Solution
Broadcom	TIS INTEC
CBRE Group	UNICOM Systems
Cisco Systems	Westcon-Comstor
Collabera	WPP Group
Compro Business Services	
Computer Task Group	
Dell Technologies	
Delta Airlines	
George P. Johnson	
HCL Technologies	
Hemmersbach	
Hilton	
Hitachi	
Infinite Computer Systems	
Internet Initiative Japan	
Jones Lang LaSalle	
LeasePlan	
Lenovo	
Manpower	
MetLife	
Microsoft	
NetApp	
NTT Group	
Open Systems Technology	
Oracle	
Persistent Systems	
Pomeroy	
Randstad	

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