

3M: The Pioneer in Sustainability

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Abstract: This research briefly reviews some of 3M's early environmental protection initiatives, beginning with its innovative Pollution Prevention Pays (PPP) programme, which was launched in 1975. The corporation formally intensified its attention on sustainability in the 2010s, at which point it created the Strategic Sustainability Framework with 15 sustainability goals for 2025. After conducting strategic consultations with more than 50 stakeholder groups, 3M claimed to have established the targets. Because of its reputation as an inventive firm, 3M understood that it needed to concentrate on technologies that would lessen environmental effect and allay growing consumer worries about the environment if it wanted to continue producing innovative goods. The case then details 3M's "Sustainability Value Commitment" (SVC) for all new products, under which the company aimed to create goods that addressed social problems as well as environmental ones. 3M considered the selection of raw materials while designing products and packaging while keeping circular economy ideas in mind. Additionally, in order to support its efforts in sustainability and corporate social responsibility, the company tried to obtain raw materials in an ethical manner and even used supply chain digitalization.

Keywords: Sustainability, CSR, PLC, Corporate Values, Management, 3M, Environment, Recycling.

1. INTRODUCTION

The US-based multinational business, The 3M Company (3M) announced a new promise to cut the consumption of virgin plastic by 57 million kg over the course of the following five years on April 22, 2021 (Earth Day). "3M has a history of applying science to create sustainable alternatives to plastic, and with this public goal, it will be easier to share these solutions and collaborate with others on advancing a global circular economy", said Gayle Schueller (Schueller), Senior Vice President and Chief Sustainability Officer at 3M. The company aimed to reinvent its Consumer Business Group's goods and packaging in order to meet the new objective. It made an effort to employ recycled materials, bio-based plastics, and designs that would reduce the usage of plastic in general. With a more than 100-year history, 3M has a reputation for being an inventive business with a number of well-known brands. It has introduced hundreds of items throughout the years that not only had excellent functioning but also opened up brand-new markets that it controlled completely. According to 3M, sustainability is firmly ingrained into its innovation pipeline, and the company has been working to cut air emissions and avoid pollution long before it was required by law. But by the middle of 2010, criticism of the company's unsustainable paper sourcing methods, inability to reach its own sustainability targets, and product development approach that ignored consumer environmental consciousness had grown significantly.

Then, under Schueller's direction, 3M sharply shifted its attention to environmental initiatives. The business admitted its prior errors and started making improvements. Schueller believed that in order for 3M to keep producing profitable inventive goods, the corporation needed to concentrate on developments that had a minimal negative impact on the environment. Paper, pulp, and packaging suppliers for 3M were required to offer products made from sustainably harvested wood. The company thought that by taking this action, other parts of 3M's fibre supply chain would be influenced positively as well. More ambitious than its previous targets, Schueller set new sustainability targets for 2025 that included commitments to use more renewable energy sources and consume less water. The business was able to surpass some of its sustainability goals in just two to three years. That led it to "build upon" its previous commitments by incorporating new objectives. After that, it introduced a Strategic Sustainability Framework with a number of objectives to deal with energy and climate change

challenges. A "Sustainability Value Commitment" (SVC) was also introduced for each of its new goods. This meant that they would be created with an emphasis on resolving a problem with the environment or a social issue.

2. INFORMATION

A small-scale mining operation known as the Minnesota Mining and Manufacturing Company, or 3M, was established in Northern Minnesota, US, in 1902 to mine corundum, a mineral that is perfect for producing sandpaper and grinding wheels. Later, after conducting research, the company created a variety of tape and sandpaper items. The strategy employed by 3M over the years was to create a new product for a market section or niche, determine the price, and then dominate that market segment or niche. In the 1930s, 3M invested about 45% of its profits in the development of new products, which led to the creation of lucrative goods that allowed the company to treble in size during the most difficult decade ever for US firms. 3M debuted on the New York Stock Exchange in 1946. It had more than \$100 million in revenue and employed about 10,000 employees by the time company reached its 50th year (1952). '3M International' was founded by 3M in the 1950s, and operations were started there and in other nations. The steady early expansion helped 3M establish itself in a global market. It more than doubled in size and hit the \$1 billion mark between 1963 and 1967. A long-term commitment to sustainability was professed by 3M. It asserted that sustainability was fundamental to all of its business practises and operations, and that it was tightly linked with its innovation pipeline. Long before sustainability became a buzzword, it also complied with the demands of manufacturers for improvements to boost energy and fuel economy.

The Pollution Prevention Pays (PPP) programme was invented by 3M in 1975. Its main goal was to stop pollution before it started so that it wouldn't need to be cleaned up afterwards. Over the years, the PPP programme was stated to have generated over 5,000 projects and saved the corporation billions of dollars. Additionally, the business only included the savings from the first year when calculating the advantages of its PPP initiatives, effectively discounting the pay out in its reporting. With net sales of US\$3.5 billion, the corporation had about 80,000 employees dispersed throughout 40 countries by 1977. The corporation set a target in the 1980s to have 25% of each division's revenue come from goods that weren't around five years prior. The business created the 3M Air Emission Reduction Programme in 1987 to fulfil its corporate environmental obligation for emissions of volatile organic compounds (VOCs). According to the programme, VOC emissions were drastically reduced. For the first time in the history of the company, 3M's total sales in 1992 came from outside markets in excess of 50%. The largest restructuring project in 3M's history, which accounted for a fifth of its revenue in the 1990s, was the deconstruction of the "Information, Imaging and Electronics" sector. Despite the company's continuous growth, a leadership shift in the early 2000s led to another reorganisation and a cost-cutting initiative.

The 2000-2005 Environmental Targets (ET'05) were developed by 3M in 2000 to address environmental problems through eco-efficiency and pollution avoidance metrics. Individual business unit goals that included product life cycle management in the unit's strategic plan complemented them. The official name of the business was changed to "3M Company" in 2002, the year of its centenary. Sales for the corporation surpassed \$20 billion for the first time in 2004 thanks in large part to the development of new, cutting-edge goods. A new set of corporate environmental targets from 2005 through 2010 (ET'10) were created by 3M in 2005. Since 2011, 3M has released an annual report detailing the status of sustainability in all areas of the company's global operations. 3M's global revenues surpassed US\$ 30 billion in 2013. It has always been praised as a leader in the field of innovation management. In R&D over the course of its existence, the corporation has spent around 7% of its earnings. 3M received around 3,000 patents annually from all over the world, with more than 500 of those being granted in the US alone. 3M received their 100,000th patent in 2014. Each year, the firm introduces about 1,000 new goods. The company's Code of Conduct was one of 3M's values and was regarded as a source of competitive advantage. According to Schueller, "We perform a materiality assessment every two years to get insights on what stakeholders say are both 3M's highest-risk areas and our biggest possibilities to have positive impact. To find out what they consider to be most crucial and how 3M can have the biggest possible beneficial influence, we also regularly survey our workforce."

Safety & Industrial, Transportation & Electronics, Health Care, and Consumer were the company's four main business groups (see Exhibit I for details on the business categories). Automotive, business solutions, consumer markets, design & construction, electronics, energy, government, health care, manufacturing, safety, and transportation were among the sectors it covered. Scotch Tape, Post-It notes, Nexcare bandages, and Thinsulate insulation materials were among of 3M's most well-known goods and brands. With factories and distribution centres spread across 50 nations, 3M established a sizable global supply chain throughout its more than 100 years of business, enabling it to sell 60,000 items worth US\$30 billion in 200 nations. With a position of 22 in Gartner's Supply Chain Top 25 for 2020, it received widespread recognition for its

creative and robust supply chain. It was also the only business to receive the EPA's Energy Star Award each year the distinction was given. The Dow Jones Sustainability Index (DJSI) selected 3M for inclusion in 2018; this was the company's 19th year of recognition.

3. THE GROWING CONCERNS WITH SUSTAINABILITY

3M has a long history of innovation, but when it produced products that were harmful to the environment, it had to deal with unforeseen consequences. Fluorosurfactants were commonly used in the company's firefighting foams and stain-resistant carpet treatments throughout the years; they persisted in the environment, particularly in drinking water, and were later discovered to be carcinogenic. The material was the subject of multiple litigation for the corporation, which negatively impacted both its financial position and stock price. Since 3M saw plastics as trouble-free items that improved quality of life, it used them widely in many of its products. The business later adopted the view that, in addition to recycling it, there was a need to reduce plastic usage because it was a major contributor to the world's rubbish problem. According to 3M's yearly sustainability reports, the corporation virtually always falls short of the sustainability targets it sets for itself. 3M received harsh criticism for missing or falling short of self-imposed deadlines for lowering greenhouse gas (GHG) emissions, conserving water, and cutting back on energy use. Industry watchers bemoaned the fact that such errors went unnoticed and that corporations were not held responsible.

In addition, 3M had a policy for sourcing pulp and paper that included a commitment that some of its core goods would be printed on paper that was Sustainable Forestry Initiative (SFI) certified. However, due to some deficiencies in SFI, certain forest defenders harshly criticised 3M's acceptance of the certification method. It was determined that SFI fell short in a number of areas, including transparency and the completeness of the examination, when compared to the Forest Stewardship Council (FSC) accreditation, which is the industry standard. "Corporate customers and the public rely on forest certifications to know that the paper, fibre, and timber they buy is responsible," said Todd Paglia (Paglia), Executive Director of forest and climate advocacy organisation, Forest Ethics. These labels should make it possible for customers to stay away from goods that harm wildlife, streams, and forests, as well as violate their human rights. When it comes to SFI, the label is deceptive.

4. A SUSTAINED EFFORT TO PERFORM ETHICAL SOURCING

After taking note of the complaints, 3M finally amended their Pulp and Paper Sourcing Policy in 2015. Paglia stated that 3M needed to update its sourcing policy because "consumers are increasingly demanding assurance that the products they buy are produced in a way that protects our environment and respects human rights - the kind of transparency and leadership 3M offers in this revised policy represents an important step forward for the industry." The new policy aimed to guarantee that the paper, pulp, and packaging materials supplied by 3M's suppliers were made from sustainably harvested wood. All suppliers of paper-based goods and packaging were required to gather wood in a way that didn't have a negative effect on intact forest landscapes and peatland ecosystems. According to Jean Sweeney, vice president of operations for environmental, health, safety, and sustainability at 3M, "We are taking responsibility for making sure our pulp and paper suppliers meet the requirements of the policy, and we are helping them to raise their performance if necessary." Additionally, the suppliers were requested to consent to the policy of 3M being applied to those sources. According to the business, "3M will engage with its direct and indirect suppliers to educate them on the forestry concerns addressed in the policy and support them in setting up their own responsible fibre purchasing programmes in order to promote change across the sector. It is hoped that this will cause a positive chain reaction that expands beyond 3M's fibre supply and spurs market demand for forest protection, labour rights respect, and indigenous peoples' rights. Analysts noted that with the implementation of its new policy, 3M held all suppliers to one of the sector's highest standards for social justice and environmental sustainability.

In addition to defending indigenous peoples' rights, 3M's policy sought to safeguard high conservation assets such as intact forest landscapes, peatlands, and the habitat of endangered animals. The company said in a statement that, "In addition to the environmental elements of today's policy, it also sets strong standards related to social concerns, including respect for workers' rights and indigenous peoples' rights to free, prior, and informed consent to operations on their traditional lands." 3M separated themselves from the SFI label through the new policy. The business claimed that it had worked with numerous environmental organisations to develop its new strategy. It said that it aimed to make sure that suppliers did not violate any conservation criteria through The Forest Trust, a non-profit organisation. The business declared that it will break off relationships with any suppliers who failed to adhere to its new requirements and provided illegally or unethically logged

trees. The Indonesia-based Royal Golden Eagle Group (RGEG), which had long faced criticism for its unsustainable forestry practises and questionable human rights records, was one of the suppliers with whom 3M severed links after notifying them of its sourcing concerns. "By cutting business ties with contentious forest destroying groups like the Royal Golden Eagle Group, 3M is demonstrating that it is serious about turning its new policies into actual world change," said Rolf Skar, Forest Campaign Director for Greenpeace.

The business argued that the policy was a reflection of its fundamental principles and commitment to emerging as a sustainability leader. With sustainability at its core, the business had to continuously assess the best practises, cutting-edge technology, and state of the environment, which resulted in the adoption of its new policy. In order to successfully implement its policy, 3M established positions in each of its four global regions. The business also stated that the costs of implementing the strategy will not have a negative effect on profits. Several environmental organisations that had been denouncing 3M's absence of a comprehensive paper purchase policy praised the company's new policy. Paglia believed that due to the magnitude of 3M's supply chain, its new policy would have widespread repercussions. No other manufacturer, according to Paglia, has enacted a strict policy with such global reach. In order to keep up with emerging technical and digitization trends as well as the competition, 3M took on the mission of supply chain digitalization in 2017. In order to assist its sustainability and corporate social responsibility activities, it used supply chain digitization in far more novel ways. Nearly 5,000 of 3M's direct suppliers, spread across more than 70 nations, were contacted and requested for further information, including the location of the harvested wood fibre they used to create 3M's goods.

The business considered a digital, partner-to-partner information flow to be necessary to support these efforts. For ethical sourcing and traceability, a cloud-based programme called Supply Shift was used. A number of 3M's suppliers were found to have forestry partners who had trees marked with bar codes. Each tree was able to be linked to a particular order thanks to the handheld RFID scanners. The scanned bar codes were then sent to the mill's ordering system. Within a few years, 3M enhanced its traceability information to such an extent that it was able to track 85% of its global production paper supply to the mill level and 40% of its supply to the forest the wood fiber came from. The business planned to eventually identify the forest from which each of its materials originated. In addition to focused raw material traceability, 3M sought to improve supply chain technologies and communications to make sure its suppliers were using conflict-free minerals.

5. ESTABLISHING NEW SUSTAINABILITY GOALS

An investment in sustainable materials, assuring energy and water management, and increasing its pipeline of diverse leaders were among the expanded sustainability goals for 2025 that 3M stated in 2015. "Our 2025 goals reflect 3M's commitment to improving our business, our planet, and every life," Schueller said. "As long as we keep working together with our clients, our communities, and other parties, we think we can reduce these international barriers even more." With Schueller serving as its Chief Sustainability Officer, 3M established the "Sustainability and Product Stewardship Organisation" in 2018. "This new organisation reflects the importance of our corporate sustainability function and will enable synergies across multiple product stewardship and environmental functions," stated Dr. John Banovetz, Senior Vice President, 3M Research & Development, and Chief Technology Officer.

In order to help prioritise efforts and focus its operations, 3M claimed that it worked with a number of stakeholders on matters like sustainability goals and progress. The company stated that it collaborated with organisations like The Climate Group (CG), World Resources Institute (WRI), and World Business Council for Sustainable Development (WBCSD) (See Exhibit II for information on these entities). Additionally, the company submitted its financial information in accordance with the Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), International Finance Corporation (IFC), and Task Force on Climate-related Financial Disclosures (TCFD) (see Exhibit III for details on these Reporting Standards). The corporation introduced a Strategic Sustainability Framework in 2018, with the stated goal of "applying our science to improve life". On the basis of three pillars - Science for Circular, Science for Community, and Science for Climate, the corporation then developed 15 sustainability goals for 2025. "By setting stretch goals, you can help drive much-needed progress against the world's greatest challenges, but to be credible, those stretch goals must be rooted in science, accurate mathematical modelling, and specific plans to achieve them," Schueller said when discussing sustainability goal setting as a balancing act.

(Refer Figure 1, 2 and 3)

In order to reduce plastic waste and reuse plastic materials, the first pillar focused on using raw resources that supported the circular economy. The second pillar concentrated on reducing its carbon footprint, speeding global climate solutions, and switching to solar energy from carbon-based fuels. Utilising science to improve the world was the third pillar. It intended to increase charitable giving abroad and develop its social justice programmes. 3M worked to strike a balance between the three main pillars of sustainability - Economic success through the development of unique solutions to sustainability problems, environmental protection through the use of solutions that addressed environmental problems, and social responsibility through dialogue with important stakeholders in order to continuously advance its sustainability practises. "3M believes that applying an innovation mindset to challenges, outlining the steps necessary to accomplish them, and then holding ourselves accountable to our goals helps us deliver on the promises we make," Schueller stated. A new committee was established by the 3M Board of Directors in 2019 to oversee the organization's strategy for R&D, commercialization, sustainability, environmental stewardship, and other relevant initiatives.

6. A COMMITMENT TO SUSTAINABILITY

A "Sustainability Value Commitment" (SVC) was promised for all new products by 3M in 2019. This required each of its business groups to consider how any new product they planned to create "is serving a greater good than previously" in terms of resolving a problem with the environment or addressing a social issue. In order to focus its efforts, the corporation decided to create products that could have a greater good. Reusability, recycling, energy efficiency, waste reduction, water savings, responsible sourcing, and renewability were among the qualities that 3M employees urged to take into account when developing new products. The corporation anticipated that the value it offered with its new goods would take many different shapes. For instance, by using less-emitting components or manufacturing techniques than the competition, the new product may assist a client in reducing their footprint in terms of greenhouse gas (GHG) emissions. As an alternative, components that could assist a client in replacing a legacy material could be offered. Additionally, the design of 3M's new product may help new business models develop. A new recycling stream, for instance, might be created and then integrated into fresh manufacturing procedures.

Analysts predicted that the new policy will encourage all of 3M's staff, from researchers and designers to the production and supply chain teams, to take sustainability into account earlier and more thoroughly when developing new products. "This was an intentional choice," Schueller said. "It shifts that investment in favour of greater sustainability, allowing us to transform our business by transforming our products." It was anticipated that the new vow would increase 3M's sustainability. According to experts in the field, 3M's new commitment was based on their prior efforts to advance sustainability. According to 3M's 2019 sustainability report, over the previous 15 years, its GHG emissions, energy use, and water use as a percentage of net sales all significantly decreased. "We've made such significant progress on the 2025 Sustainability goals we set in 2015 that we're raising the bar," Schueller said. "The goal for the new product is an illustration of the ambitious goals we'll be setting in the upcoming months as part of our strategy focus on leveraging scientists for circular, climate, and community issues."

In addition to creating new revenue streams and making a beneficial impact on top-line revenue, 3M wanted to use sustainability considerations to set its products apart from those of rivals. Beyond 3M's own activities, the goal's main motivation was to support its clients in achieving their sustainability objectives. According to the business, products introduced in the preceding five years accounted for about a third of its sales. It was adding the money for the new commitment to its R&D budget in the form of new training and new personnel who would be responsible for following through and keeping track of progress. It was anticipated that the initiative would require continual training and enforcement. The business acknowledged that it was still learning and refining its methodology for tracking the development and results of its new commitment. In its future sustainability reports, 3M promised to track the number of goods that had been released with a Sustainability Value Commitment, assess each project, monitor development from a financial standpoint, and report its findings.

The new promise would be implemented somewhat differently for each division, according to 3M, because the new products for each were created and released across quite varied time frames. It was suggested that while the market could see the introduction of electronic devices with SVC the same year, that wouldn't necessarily be the case for health products. Analysts believed that the connection between corporate sustainability and fresh commercial prospects was a relatively recent problem for companies. Businesses all across the world were looking for ways to proactively handle issues like resource scarcity and the demand for increased energy productivity that were brought on by climate change.

7. WORKING ON PRINCIPLES OF CIRCULAR ECONOMY

As part of its commitment, 3M upgraded packaging, examined the materials and manufacturing procedures used to create its goods, as well as carefully considered the effects this had on its customers and larger communities. It worked to increase a product's strength and provide a longer lifespan for it. The business also took the product's end of life into account. When choosing raw materials for product and package design, 3M kept the concepts of the circular economy in mind. For example, it aimed to produce them using more recycled or renewable materials. Additionally, 3M consistently sought for methods to collect, reuse, and recycle waste materials and other by-products throughout its supply chains. Schueller said, "We are talking to polymer suppliers to create additional renewable raw materials. The company is looking to develop goods that can be recycled or use renewable raw materials. In order to discover what can be recycled efficiently and what is more difficult, we often visit materials recovery factories. Particularly helpful input came from recyclers as we considered product and package materials."

In its efforts to embrace recycling and make the most of its resources, 3M began with modest actions. It has released a number of products that encourage the recycling and repurposing of plastic trash over the years. As an illustration, the Health Care Business Service Group of 3M contributed to the global life extension of almost 150,000 devices per year, preventing electronic waste from ending up in landfills. According to Schueller, some of 3M's new eco-friendly goods include recycled paper and plant-based adhesive. In an effort to promote a circular economy, 3M joined the Ellen MacArthur Foundation's Circular Economy 100 (CE100) in 2019. The organisation seeks to develop solutions that accomplish more with fewer resources as part of its strategic focus on Science for Circular. The statement from Schueller says "We are excited to engage with a committed group of leaders focused on innovative approaches to driving a circular economy based on sustainable use and reuse of finite resources."

Collaborations with organisations including The Recycling Partnership, the Sustainable Packaging Coalition, Closed Loop Fund, and the Minnesota Sustainable Growth Coalition were part of the company's product development strategy (see Exhibit IV for more on these organisations). In order to develop recycling infrastructure, educate people about recycling, and conduct research into the obstacles preventing a more equitable recycling system, 3M contributed the initial funding for the Recycling Inclusion Fund in 2020. A first-of-its-kind public tool for showcasing and tracking the diversity of plastic trash, the US and Canada Recycling Infrastructure and Plastic Trash Map, was co-funded by 3M. It also searched for opportunities to recover priceless polymers and re-use them in the manufacturing supply chain.

8. PROGRAMME FOR ENHANCED SUSTAINABILITY GOALS

As part of their new commitment to the 2025 Sustainability Goals, 3M planned to contribute 300,000 work hours of skill-based volunteerism by its workers in 2019. As a result, it increased the scope of 3M Impact, a skills-based service initiative that allowed staff members to apply their professional expertise, life experience, and enthusiasm to problems that might result in social change. The programme was also believed to foster interpersonal, problem-solving, and leadership abilities. "People want to work for companies that are purpose-driven, and I'm delighted to see 3M's increased investment in their employees and communities with this announcement" said Gavin Cepelak, Senior Vice President of PYXERA Global, Inc., which facilitated the variety of projects under 3M Impact. By making the new pledge, 3M hoped to increase employee empowerment, assist in addressing some of society's most difficult problems, and benefit communities all over the world. In order to solve the environmental and socioeconomic difficulties in their communities, Schueller said, "NGOs, colleges, and social enterprises around the world face resource limits. With this new objective, we're encouraging our employees to help others in ways other than through traditional volunteerism and 3M products and technologies by utilising their professional abilities to advance causes."

In 2020, 3M announced bold plans to use 100% renewable sources of electricity for its global operations. Speaking about the reasons for the company enhancing its sustainability goals, Schueller said, "We thought we were ambitious by reaching for 25 percent renewable energy by 2025, but in 2018, we surpassed that goal. So, we set a new one in 2019 to be at 50 percent by 2025. We have committed to go all the way to 100 percent renewable by 2050." 3M joined the international NGO CG's RE100 program, which assisted multinational corporations in obtaining 100% renewable electricity for their worldwide operations. "They are a major manufacturer with a significant and challenging footprint, with manufacturing and converting facilities in more than 35 geographies," said Amy Davidsen, Executive Director for North America at CG. "Being such a powerful company, known for products like Post-it Notes and Scotch Magic Tape, 3M's RE100 promise won't go overlooked. We hope that it will inspire other manufacturers to adopt similar practises."

The newly established Family Forest Carbon Programme (FFCP), which aimed to increase carbon sequestration on family-owned forestland throughout the US, received backing from 3M in 2020, according to the company's announcement. In order to improve the health of their forests and increase carbon sequestration, FFCP provided incentives to family and individual forest owners to implement good forest management practises. In order to reduce carbon dioxide in the atmosphere, it thus aimed to include family forest owners. The FFCP also aimed to enhance the general health of the forest, fire resistance, and water quality. According to some study, FFCP could allow for the absorption of 20% of the carbon pollution generated in the US, which is equal to the emissions from every passenger vehicle in the country and about 30% more than had been predicted earlier. In 2020, it was estimated that 290 million acres of US forests were held by households, significantly more than the country's state governments, the federal government, or the forest business. However, many of them found it difficult to manage their forestland due to the costs involved. Vice President of Strategic Partnerships at the American Forest Foundation (AFF), which established the FFCP, Nathan Truitt, said "3M understands the support needed to engage landowners and implement a new programme at the ground level, and they have shown leadership in providing resources essential to the execution of this programme." Without 3M's backing, we would not be able to carry out our work. Their investment was crucial in establishing the framework for the Family Forest Carbon Programme. By investing in innovative strategies that promote the carbon potential of family-owned forests, we encourage other businesses to follow their example."

9. THE FUTURE PATH

The Ethisphere Institute honoured 3M in February 2021 for the seventh consecutive year for "Ethics and Integrity in Business Conduct and Compliance." The vice president and chief ethics and compliance officer of 3M, Michael Duran, said "acting with unwavering integrity is a critical component of 3M's culture and guides how 3M does business." Compliance and ethical business behaviour were required and promoted at 3M by setting the bar high and leading by example. It was also thought to be the main factor in 3M's standing as an ethical business among customers and in a variety of industries. By making an investment in the multi-billion dollar climate impact investing fund TPG Rise Climate, which scaled up the deployment of mission-driven capital, in July 2021, 3M strengthened its continuous commitment to environmental stewardship. According to Schueller, "3M is committed to making a difference in the trajectory of climate change, from environmental goals to reduce water use, improve water quality, and achieve carbon neutrality, to our ongoing investments in emerging technologies that advance sustainability." From a 2019 baseline, 3M sought to reduce carbon emissions by 50% by 2030 and 80% by 2040. In addition, 3M promised to return higher-quality water to the environment after it has been used in industrial activities, with intermediate reductions of 10% by 2022 and 20% by 2025 (from a 2019 baseline) targeted for its plants' water use at that time. 3M set water use reduction goals of 2.5 billion gallons (or 9.5 billion litres) annually. By 2050, climate neutrality was anticipated to be achieved thanks to 3M's new climate goals to minimise its carbon and water footprint. It asserted that the objectives were established via strategic interviews with more than 50 stakeholder groups, with a focus on customer input in the healthcare, consumer, automotive, and electronic industries.

To accomplish its goals, the corporation planned to invest roughly \$1 billion over the following 20 years. In order to advance its new environmental aims, the corporation started implementing technologies at its locations all around the world. 3M put a lot of effort into integrating sustainability into the design and production of their products. By the end of 2023, the corporation planned to install cutting-edge water purifying technology at its busiest water-using regions, and by 2024, it was expected to be completely operational. It had a digital factory programme that investigated inefficiencies using cutting-edge analytics and digital modelling. Customers were credited by 3M with pushing businesses to adopt environmental initiatives. Additionally, the business believed that the COVID-19 pandemic should serve as a wake-up call for everyone to take greater precautions for the health of the world and its people. According to Schueller, "the pandemic has helped people to better understand what matters to them personally. Examining what is actually occurring in our environment is one aspect of this. The increased awareness and drive to make a difference at this time is what makes it thrilling. By placing a greater emphasis on and raising awareness of the sustainability and ESG [environmental, social, and governance] measures promoted by firms, consumers and customers are driving significant change. We will all benefit if we can work together to identify methods to support our clients' efforts to build sustainable futures."

Exhibit I: Information on Business Groups

Group	Particulars
Safety and Industrial	Consists of personal safety, adhesives and tapes, abrasives, closure and masking systems, electrical markets, automotive aftermarket and roofing granules.
Transportation and Electronics	Made up electronics (display materials and systems, electronic materials solutions), automotive and aerospace, commercial solutions, advanced materials and transportation safety.
Health Care	Includes medical solutions, oral care, separation and purification sciences, health information systems, drug delivery systems and food safety.
Consumer	Consists of home improvement, stationery and office supplies, home care and consumer health care.

Source: www.3m.com

Exhibit II: Information on the stakeholders involved in Sustainability Goal Setting

Institute	Founded in	Particulars
World Resources Institute (WRI)	1982	<p>a.) It is a global research non-profit organization established in 1982 with funding from the MacArthur Foundation, a private foundation.</p> <p>b.) WRI's activities are focused on seven areas: food, forests, water, energy, cities, climate and ocean.</p>
World Business Council for Sustainable Development (WBCSD)	1995	<p>a.) It is a CEO-led organization of over 200 international companies.</p> <p>b.) It seeks to accelerate the system transformations needed for a net zero, nature positive and more equitable future.</p>
The Climate Group (CG)	2003	<p>a.) It is dedicated to advancing business and government leadership on climate change.</p> <p>b.) Its network includes over 500 multinational businesses and 175 markets worldwide.</p>

Source: Compiled from various sources

Exhibit III: Information on Reporting Standards

Standard	Founded in	Particulars
Global Reporting Initiative (GRI)	1997	<p>a.) It is an international independent standards organization that helps businesses, governments and other organizations understand and communicate their impacts on issues such as climate change, human rights and corruption.</p> <p>b.) The GRI Standards are regularly reviewed to ensure they reflect global best practice for sustainability reporting, helping organizations respond to emerging information demands from stakeholders and regulators.</p>

Sustainability Accounting Standards Board (SASB)	2011	a.) It is a non-profit organization that connects businesses and investors on the financial impacts of sustainability. b.) SASB is focused purely on financial materiality.
International Finance Corporation (IFC)	1956	a.) It is an international financial institution that offers investment, advisory and asset-management services to encourage private-sector development in less developed countries. b.) It provides financing of private-enterprise investment in developing countries around the world through both loans and direct investments.
Task Force on Climate-related Financial Disclosures (TCFD)	2015	a.) It was created by the international body Financial Stability Board (FSB) to develop consistent climate-related financial risk disclosures for use by companies, banks and investors in providing information to stakeholders.

Source: Compiled from various sources

Exhibit IV: Information on institutes that were collaborated with for Product Development Strategy

Institute	Founded in	Particulars
The Recycling Partnership	2003	a.) It fosters public-private partnerships and drives positive change at every step of the recycling and circulatory process. b.) It diverted 500 million pounds of new recyclables from landfills, saved 968 million gallons of water, avoided more than 500,000 metric tons of greenhouse gases and drove significant reductions in targeted contamination rates.
Sustainable Packaging Coalition	2005	a.) It is an industry working group to build packaging systems that encourage economic prosperity and a sustainable flow of materials. b.) Membership has grown from nine founders to over 500 and includes representatives from across the supply chain.
Closed Loop Fund	2014	a.) It is a social impact fund investing US\$100 million to increase the recycling of products and packaging. b.) It provides cities and companies access to the capital required to increase recycling rates in communities across the US and build a circular supply chain.
Minnesota Sustainable Growth Coalition	2016	a.) It was formed by 25 major businesses and organizations in an effort to promote circular economy systems. b.) Initial areas of focus include the advancement of clean energy, organic waste and water.

Source: Compiled from various sources

Figure 1

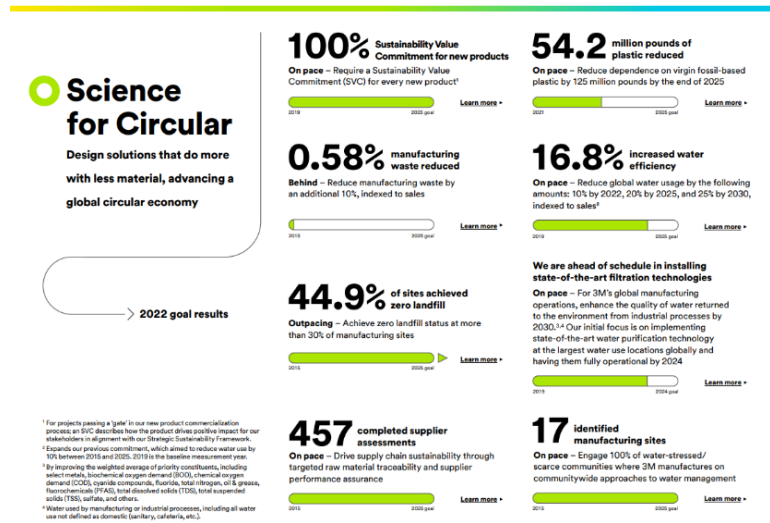


Figure 2

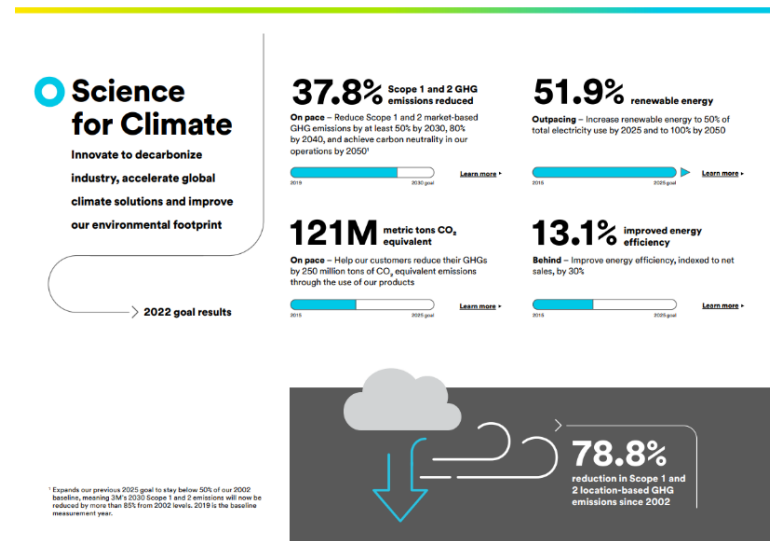


Figure 3



Source: www.3m.com

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