NTI® NanoFilm
ADVANCING TECHNOLOGY SOLUTIONS

Connecting Deep Tech with the Commercial World

SUSTAINABILITY REPORT 2020

CONTENTS

View our report online:
http://www.nti-nanofilm.com/

Credit Suisse (Singapore) Limited and Oversea-Chinese Banking Corporation Limited are the Joint Issue Managers for the initial public offering of shares in, and listing of, the Company on the Mainboard of the SGX-ST on 30 October 2020.

CORPORATE **PROFILE**

Nanofilm Technologies International Limited ("**Nanofilm**" or the "**Company**"), together with our subsidiaries (the "**Group**") is a leading provider of nanotechnology solutions, leveraging on our proprietary technologies and core competencies in research & development ("**R&D**"), engineering and production, to provide technology-based solutions across a wide range of industries. Nanofilm's solutions serve as key catalysts, enabling our customers to achieve high value-add advancements in their end-products in an environmentally sustainable manner.

Nanofilm offers surface solutions based on vacuum deposition, including using our patented Filtered Cathodic Vacuum Arc ("**FCVA**") technology. Nanofilm's nanotechnology-based solutions are utilised in a wide range of industries such as computer, communications and consumer electronics ("**3C**"), automotive, precision engineering, printing and imaging, and new energy.

Listed on the Mainboard of Singapore Exchange Securities Trading Limited ("**SGX-ST**") on 30 October 2020, Nanofilm is a constituent of the FTSE ST China Index, FTSE ST Large & Mid Cap Index, FTSE ST Mid Cap Index and MSCI World Small Cap Index.

Currently, Nanofilm owns more than 70 patents and trademarks, not including over 20 applications which are pending. The Group has over 270 employees worldwide who are engaged in R&D and engineering and it has achieved a daily turn-around of high volume, high mix parts capacity of over 5 million.

VISION

Integrating nanotechnology in advanced materials and nanoproducts into our daily lives.

MISSION

The key catalyst to enable advancement of our customers' products in a sustainable manner.

VALUES

SINCERITY

Our stakeholders are our partners. We value long-term relationships and stay our course as trusted technological partners.

SERVICE

Top class consistent service and quality to all our stakeholders.

INNOVATION

Continuous innovation is in our DNA, creating unparalleled value in a responsible sustainable manner for our stakeholders.

EFFICIENCY

Efficiency and effective processes to maximise outputs with best use of resources, underpinned by our solid scalable production system with high variability capability to cater for high volume, high mix projects.

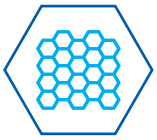
OUR **BUSINESS**

Nanofilm is a global leading technology solutions provider with strong innovation DNA. Innovation has been ingrained since 1999 as a high-tech spinoff from Nanyang Technological University ("**NTU**"), focused on advanced material science and nanotechnology. In the beginning, with virtually no market positioning and limited capital, our Group succeeded where many thought we could not when we successfully competed against technology giants from America, Europe and Japan, whose customers were accustomed to proven conventional technologies.

Against all odds, we overcame numerous fate-defining challenges and went on to revolutionise the industry by redrawing material science boundaries, exceeding all expectations.

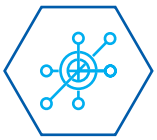
Our business model has been constantly evolving in accordance with our strategy, and it is designed and crafted for business excellence.

BUSINESS UNIT #1: ADVANCED MATERIALS



Provides advanced materials through surface solution services based on our proprietary vacuum coating technologies and processes. Our surface solution services involve the use of our FCVA and FCVA-hybrid with physical vapour deposition ("**PVD**") coating equipment to deposit our proprietary advanced materials on key components and parts of the global supply chain, enabling our customers to achieve their desired functional and/or decorative requirements for their end-products.

BUSINESS UNIT #2: NANOFABRICATION



Manufacturer and supplier of nanoproducts, which are used by our customers as components for the smooth functioning and performance of certain parts of their end-products, due to their nanoscale and/or nanofeatures. We utilise our nanofabrication technology and software to fabricate nanoproducts which are designed to fit the specific size and shape requirements specified by our customers as well as to provide the required functional properties to their end-products.

BUSINESS UNIT #3: INDUSTRIAL EQUIPMENT

Manufactures and sells turnkey equipment systems ranging from coating equipment to auxiliary equipment, such as cleaning lines to automation systems, which are installed at our customers' production lines. We provide our customers with not just the physical equipment, but also customised operating software for our systems and training, as well as spare-parts, customer service and other forms of after-sales support.

NANOFILM'S TECHNOLOGY-BASED SOLUTIONS ARE AN INTEGRAL PART OF OUR DAILY LIVES

Today, our technology-based solutions are utilised in a wide range of industries such as 3C, automotive, precision engineering, and printing and imaging. Our products and services are integral to the smooth functioning of many technologies and tools which are essential to our modern daily lives.

SUSTAINABILITY **JOURNEY**

Since 1999, Nanofilm has shown a strong track record in acquiring and retaining customers, including market leading blue-chip end-customers. Our solutions serve as key catalysts that enable our customers to achieve high value-add advancements in their end-products, in an environmentally sustainable manner.

It has been a transformational journey for us, one after another, to deliver solutions for a greener better world. Grounded by our deep nanotechnologies ("**Deep-Tech**") and facilitated by our strong governance and operational systems, we have repeatedly redrawn material science boundaries by embedding our technology-based solutions, as enabling catalyst, in a wide number of mission critical applications of both depth and breadth, not limited by any industry or product.

HOW WE DELIVER

We place a high emphasis on research and development ("**R&D**") in fundamental research and are technologically-focused through our proprietary equipment, FCVA advanced materials and nanofabrication.

We have grown and developed alongside our customers, through our continuous focus on R&D and innovation, often with R&D initiatives being undertaken in joint collaboration with our customers, and by leveraging our strong in-house engineering capabilities as well as our solid efficient production capabilities.

PROPRIETARY FUNDAMENTAL RESEARCH PLATFORM

Biomedical **IoT Optics**

- Strengthen in-house proprietary research platform to develop next generation technologies
- Build sustainable competitive advantage by maintaining our IP rights
- Continue to innovate on existing technology (e.g., copper plasma) to further improve their scope into new applications and end-markets

CUSTOMER-CENTRIC CO-DEVELOPMENT MODEL

3C
Existing end-markets

FMCG
New end-markets

- Customer-focused approach to accelerate time to market for innovative offerings
- Seek to engage at an early stage of customers' product development and design process
- Collaboration enables pioneering of value-added solutions and provides access to a ready market

Strong IP Platform
>70 existing patents and trademarks; additional >20 patents under application

Pipeline Quality
Multiple innovative products in pipeline

Customer-focused R&D Spend
>60% of R&D and engineering projects in 2020 initiated as a result of customers' requests

SUSTAINABILITY **JOURNEY**

Our business model and structure have evolved along with the changing dynamics of our business to maximise commercial success and have a proven track record in commercialising Deep-Tech through various avenues, including a high-mix, high-volume production and operational capability, and strategic mergers and acquisitions ("**M&A**"), to carry our Deep-Tech to the marketplace.

Our Business Unit ("**BU**") driven structure and centralised product and business development allows us to drive new industrial applications and fend out to multiple industries simultaneously with speed to market. Our BUs are supported by our core, centralised functions across Systems and Policies, R&D, Strategy and M&A, Business and Product Development, and Capital and Finance. Each BU operates independently (due to different industries, applications, products and customers) in order to have the freedom to grow and achieve their full potential.

WHAT WE ARE GOING TO DO

We have come a long way, constantly innovating with Deep-Tech grounding, building and placing great emphasis on recruiting, training and nurturing talents in multi-disciplinary fields to adapt and excel in an ever changing and highly competitive market to address our customers' needs. Against the odds, we overcame numerous fate-defining challenges and went on to revolutionise the material science world as the gold standard in nanotechnology solutions, exceeding all expectations. Today, we are in an even stronger position to accelerate our commercialisation paths in multiple areas and continues our strategy to leverage on our Deep-Technology base to build-up our BUs and enter new industry domains, in a sustainable way.

Going forward, by advancing our BU growth independently in respective industries and enlarging our Deep-Tech's depth and breadth, the Company is well placed in promoting stakeholders' interests and unlocking shareholders' values. We will also promote continuous innovation through Nanofilm Innovation Engine ("**NIE**") to drive Business Development Process ("**BDP**") and Operational Excellence Suite ("**OES**" is a collection of our proprietary operational systems).

CHAIRMAN STATEMENT

"TO EMBARK ON OUR SUSTAINABILITY JOURNEY

WE FOCUS ON OUR FOUR KEY SUSTAINABILITY STRATEGY PILLARS OF SUSTAINABLE INNOVATION, ENVIRONMENT, SOCIAL AND GOVERNANCE.

DR. SHI XU (史旭)
Executive Chairman

CHAIRMAN STATEMENT

DEAR STAKEHOLDERS,

I am pleased to present Nanofilm's inaugural Sustainability Report.

At Nanofilm, we are committed to upholding the highest standards of Environmental, Social and Governance ("ESG") practices to ensure the sustainability of our ecosystem and fulfil our responsibility towards our stakeholders. To this end, we have committed to a set of ambitious targets (Page 14) to track the progress of our sustainability journey.

Sustainability is an essential and integral part of Nanofilm's strategy. It is a principle embedded in our numerous innovations and nanotechnology solutions dedicated to making a positive impact on our communities.

We have come a long way, from incubating our deep-technology to commercialisation and accelerating our technology's commercialisation paths in a wide number of mission-critical applications in multiple and still growing industries. On the back of this journey that started in 1999, we are constantly innovating and developing our advanced materials and building our core production capabilities and capacities. We have revolutionised the material science world and today are the gold standard in surface solutions and nanofabrication, exceeding all expectations.

OUR COMMITMENT	OUR ACTIONS
Improving environmental performance.	• Providing industrial equipment for mass production of solar panels for our customers. • Transiting to renewable energy sources by installing solar panels to our production facilities. • Use of green hydrogen fuel cells to complement our energy requirements.
Developing pathway towards zero wastewater discharge.	• Investments in ultrafiltration and reverse osmosis filtration systems.
Caring for our employees' needs and well-being.	• Ensuring high quality hygiene and living standards in our dormitories and staff canteen.
Upholding high standards of corporate governance to ensure integrity and continuity of our business and operations.	• Maintaining a robust organisational structure, policies and systems. • Committing to our pledge to meet our ESG targets.

"WE REMAIN STEADFAST IN OUR APPROACH TO SUSTAINABLE AND RESPONSIBLE INNOVATION. WE BELIEVE INNOVATION AND SUSTAINABILITY ARE INTEGRATED AS ONE IN OUR UNIQUE POSITION AS A DEEP-TECH COMPANY.

Our solutions serve as key catalysts that enable our customers to achieve high value-added advancements in their end-products in an environmentally sustainable manner. Our solutions can replace finite base materials for better allocation of world's resources and reducing carbon footprint in mining and processing such raw materials. Our advanced materials enable functional properties including high hardness, density, corrosion resistance and electrochemistry critical to functions required in many industrial applications.

We remain steadfast in our approach to sustainable and responsible innovation. We believe innovation and sustainability are integrated as one in our unique position as a Deep-Tech company.

Nanofilm will do its part to support the international agenda towards climate action. We are committed to improving our environmental performance through our efforts and investments in green energy. We started by providing industrial equipment capable of enabling mass production of solar panel films to our customers. And as part of our ongoing efforts to adopt greener manufacturing processes, we are installing solar panels at our production facilities to gradually transit to renewable energy sources. In the longer term, we are exploring the use of green hydrogen fuel cells to complement the energy requirements of our production facilities.

Water is another material input to our production, and we are developing a pathway towards zero wastewater discharge from production. We have taken concrete steps in this regard, including investments in ultrafiltration and reverse osmosis filtration systems to recycle our production water. By recycling our water, we not only ensure that we consume less water, conserving this precious natural resource and preventing pollution to the water ecosystem, but can also improve our production efficiencies in the long run.

Another area of paramount importance is the recruitment, training, and nurturing of talents in multi-disciplinary fields. We continue to innovate and adapt to the dynamic market to understand better, anticipate, and satisfy our customers' ever-complex and stringent requirements. On the social responsibility front, we adopt a 360-degree approach and adhere to one of the best-in-class frameworks to care for our employees' needs and well-being. On top of offering excellent working conditions, we ensure that high quality of hygiene and living standards are maintained in our dormitories and the staff canteen in our Shanghai facility. We are also strong proponents of continuous education and learning, actively extending our support to local educational institutions through bursary contributions and collaborative tie-ups.

Beyond running our business in an environmentally responsible manner, we are also committed to upholding high standards of corporate governance to ensure the integrity and continuity of our business and operations. Despite the challenging operating environment in recent years, we have continued to maintain a robust organisational structure, with policies and systems to ensure that sustainability is practiced at all levels of the Company.

The Board aligns with the entire organisation and considers sustainability issues as part of its strategic formulation to determine the material ESG factors that matter to the Company. We will commit to our pledge to meet our ESG targets.

Thank you for participating in our sustainability journey with us.

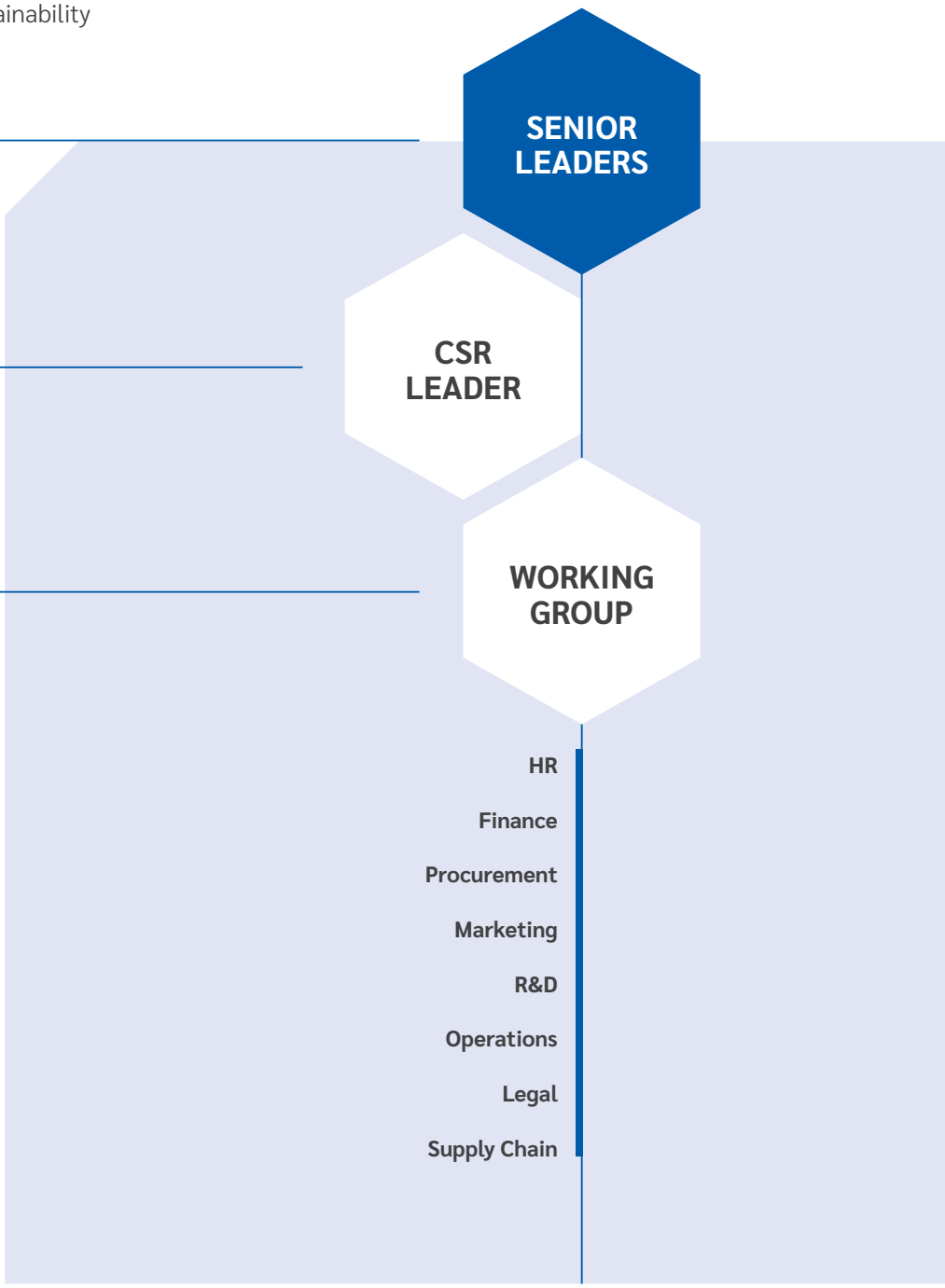
On behalf of the Board of Directors

DR. SHI XU (史旭)
Executive Chairman

APPROACH TO **SUSTAINABILITY**

SUSTAINABILITY IN OUR ORGANISATIONAL STRUCTURE

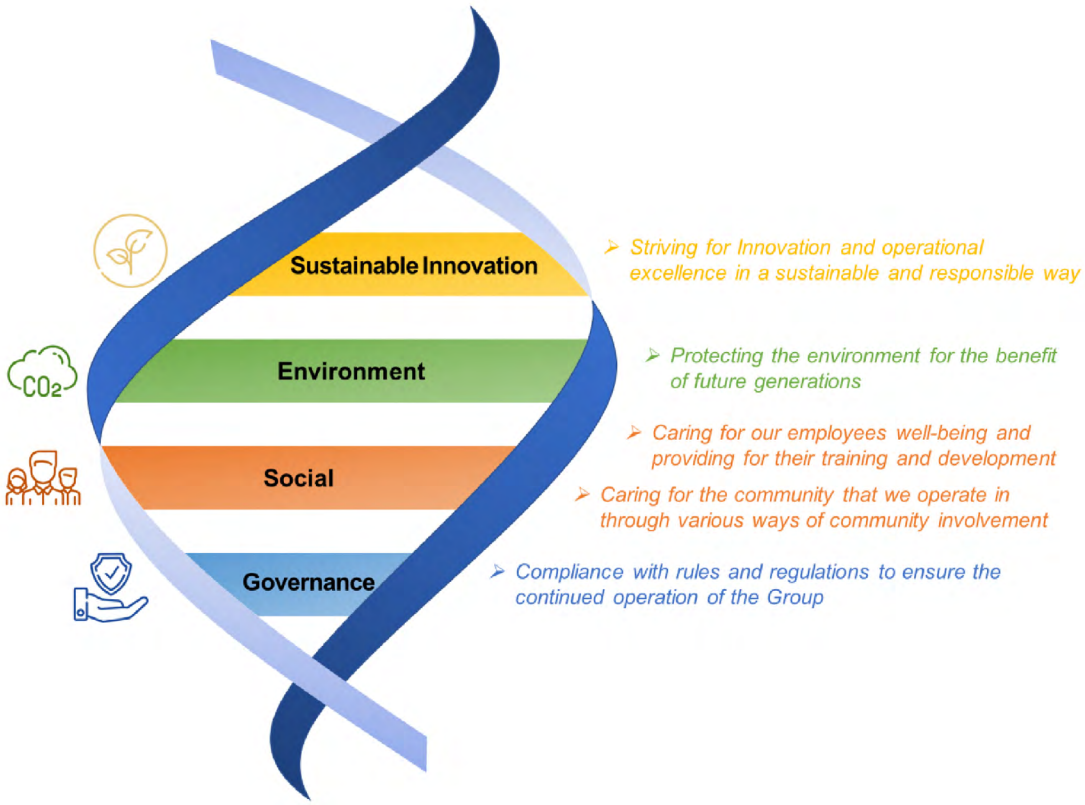
Sustainability is a vital part of our corporate strategy for achieving long-term sustainable growth through value creation for our people, our environment and our society. We have structured our organisational structure to lead and execute our sustainability framework.



SUSTAINABILITY STRATEGY – INNOVATION IS OUR DNA

To be a future generation Deep-Tech company, we constantly strive for innovation and operational excellence in a sustainable and responsible way, guided by our Sustainability Strategy, and we believe that our strong and robust management systems and operational processes allow us to achieve this.

Our Sustainability Strategy sets the tone for the next decade as we move towards our targets and aims to create integrated values with disciplined execution and a commitment to provide responsible technology-based solutions and commit to deliver value for all our stakeholders.



As a Deep-Tech company, innovation is part of our DNA and because of this special position we are in, we are conscious to ensure that we innovate responsibly and sustainably as we believe that innovation and sustainability are interdependent. We are also committed to the continued research and development of our technologies to create solutions with positive sustainability impact and improve lives. Additionally, we are also committing in the environment, social and governance front as part of the global sustainability efforts. Together, these four pillars form our Sustainability Strategy that will guide our sustainability journey forward. As we understand the ever-changing environment and its needs, we will periodically review our strategy to ensure that it is aligned with the global sustainability needs.

With our R&D teams located in three research centres in our Singapore Plant, Shanghai Plant 1 and Osaka, we believe we are equipped with the state-of-the-art technology to enhance our capabilities. We have adopted a customer-centric co-development model that enables us to create deeper customer engagement which accelerates growth and allows us to capture further parts of our customers' value chains.

APPROACH TO **SUSTAINABILITY**

CONSULTING OUR STAKEHOLDERS

We care about our stakeholders. We recognise the need to continuously develop our business in a responsible approach and to do this, we must first understand our stakeholders' expectations on Nanofilm in the economy, environment and society. We will periodically consult our stakeholders using a 360-degree framework to determine issues that are most relevant to them and Nanofilm.

An overview of our approach and rationale is set out below (with stakeholders listed in alphabetical order), together with the feedback and views we have received.

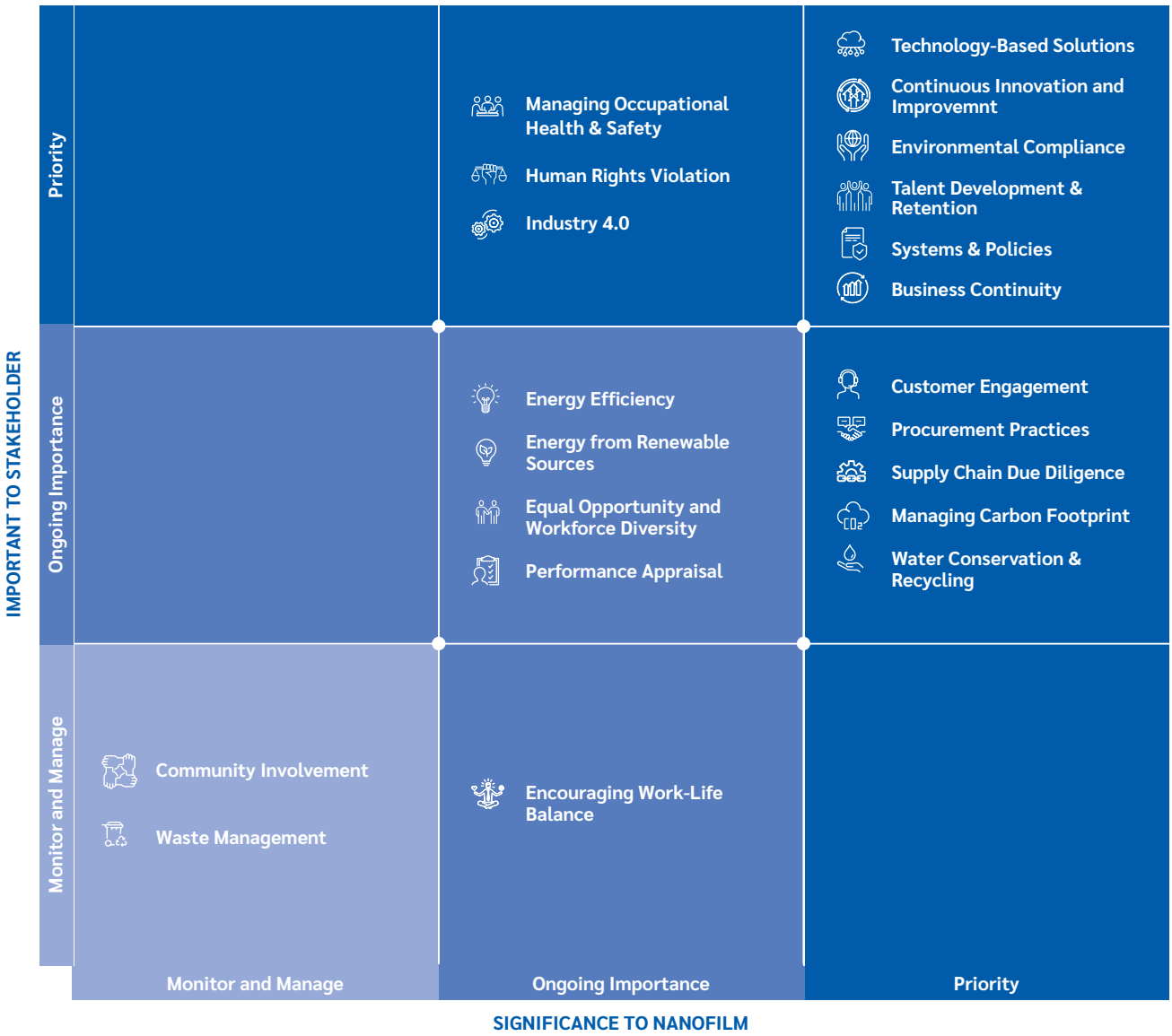
STAKEHOLDERS	HOW DO WE LISTEN?	WHAT ARE YOU TELLING US?	WHAT ARE WE DOING?
CUSTOMERS AND STRATEGIC BUSINESS PARTNERS	• Direct feedbacks via sales channel engagement • Site visits to our production facilities • Co-development of research and development projects • Periodic assessment and audits performed by customers relating to impacts on environment, health, safety and social factors	• Continue to develop innovative solutions that are mission critical in nature • Establish green factory • Ensure business continuity	• Provide a sustainable factory environment while providing solutions needed by customers • Creating value in a sustainable responsible manner • Ensure that we meet all the requirements of customers' ESG audit
EMPLOYEES	• Employee's survey and interactions • Internal updates and communication • Events and functions	• Provide training and education • Manage occupational health and safety • Maintain work life balance	• Ensure workplace health and safety enables the employees to work comfortably and safely • Employment benefits to address basic needs and help to manage stress and improve health • Training and career development are in place to improve effectiveness and productivity
REGULATORY AUTHORITIES	• Regular updates and communication • Reports and compliance • Periodical meetings with government bodies • Dialogue with government bodies	• Contribute to regulatory landscape shaping as a market participant	• Attending market events to increase communication, visibility and transparency • Play a part in contributing to economy activities and value-adding output in countries we have presence in
SHAREHOLDERS, INVESTORS MEDIA, AND ANALYSTS	• SGX Announcements • Shareholder's meeting • Annual reports • Company's website • Regular updates and communication	• Long-term profitability • Sustainability matters • Group's performance against targets • Compliance with all relevant requirements	• Committed to delivering economic value to our capital providers through a strong financial performance and our engagement with them • Regular and effective communication
SUPPLIERS, VENDORS	• Periodic supplier's assessment • Supplier's meetings	• Ability to meet Company's quality standards • Ability to meet Company's delivery timelines	• Periodic suppliers' assessment to ascertain quality of product and services acquired to ensure that they are free from hazardous substances • Supply chain due diligence to ensure our suppliers do not have incidents of human rights and child labour violation

SUSTAINABILITY MATERIALITY MATRIX

Based on our engagement with stakeholders, we developed our sustainability materiality matrix based on material aspects that are aligned with our principal business and operational risks, and formed our Sustainability Strategy which has shaped our approach to sustainability reporting, as illustrated in the diagram below.

We have also developed metrics to help us measure our progress, as indicated in our sustainability scorecard on **page 40**. We will review and adjust the matrix each year, as the external and business context changes.

The aspect boundaries 'within' the organisation are limited to Nanofilm and our subsidiaries, whereas the aspect boundaries 'outside' the organisation include customers, strategic business partners, employees, regulatory authorities, shareholders, investors, media, analysts, suppliers and vendors.



APPROACH TO **SUSTAINABILITY**

SCOPE OF SUSTAINABILITY REPORT

The scope of the report covers information on material sustainability aspects of Nanofilm from 1 January 2020 to 31 December 2020 unless otherwise specified. We believe that the report should sufficiently address stakeholders' concerns in relation to sustainability issues arising from the Group's major business operations.

This report is prepared in accordance with the Global Reporting Initiative ("**GRI**") Standards: Core Option as it provides an extensive framework that is widely accepted as a global standard for sustainability reporting. We have also referred to and set our targets with reference to the United Nation Sustainable Development Goals ("**UNSDGs**") and have considered the Sustainability Reporting Guide in Practice Note 7.6 of the SGX-ST Listing Manual.

In preparing our report, we applied the GRI's principles for defining report content and report quality by considering the Group's activities, impacts and substantive expectations and interests of our stakeholders. The data and information provided within the report have not been verified by an independent third party. We have relied on internal data monitoring and verification to ensure accuracy.

SUSTAINABILITY CONTACT

We welcome your views and feedback on our sustainability practices and reporting at sustainability@nti-nanofilm.com.

HOW WE MEASURE OUR PERFORMANCE

Our **Sustainability Strategy** is embedded into the appropriate parts of our business, with dedicated teams for each focus area, and coordination by our relevant departmental managers.

Our progress will be tracked in two key methods: measuring performance against metrics, and evaluating how well the programmes have advanced, through a series of 'commitments'.

METRICS AND TARGETS

We have established key performance indicators based on the material topics identified from our sustainability materiality matrix, our engagement with the stakeholders as well as the focus areas outlined in our sustainability strategy. We are committed to long-term sustainability efforts and will be tracking how we are doing annually.

We aim to constantly review our strategy and targets and will introduce new metrics and update targets to ensure continued alignment with our strategy.

COMMITMENTS

To ensure we have a robust sustainability programme in place, we have included the key commitments for each area above. The progress we have made against each key commitment is indicated using the symbols shown in the table below. We track and review our sustainability programme with the Board of Directors at least once a year.

SYMBOLS USED TO INDICATE PROGRESS AGAINST COMMITMENTS

SYMBOL	MEANING
Ⓝ	New commitment this year
◌	Not started
◑	In progress
●	Complete
⟳	Ongoing commitment: no end date

OUR PERFORMANCE

COMMITMENTS TO UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals ("**SDGs**") are a set of goals under the 2030 Agenda for Sustainable Development (2030 Agenda), which is a global development framework adopted by World Leaders at the UN Sustainable Development Summit in September 2015.

As a global citizen, Nanofilm supports UN SDGs through the following commitments:

2030'S TARGETS ARE MEASURED AGAINST 2020'S BASE	METRICS	2030 TARGET
SUSTAINABLE INNOVATION	Portion of total R&D spend that meets Nanofilm's ESG criteria[1]	**100%**
	R&D and engineering expenses as a percentage of total revenue	**>5%**
ENVIRONMENT	Carbon footprint intensity	**Reduce 30% tCO_2e/'000 production hours[2]**
	Share of energy from renewable sources and purchased carbon credits	**50%**
	Wastewater discharge from production	**Reduce 80% m^3/'000 production hours[2]**
SOCIAL	Staff training	**24 Hours/employee**
	Nanofilm college training	**60,000 Trainee hours**
	Disaster incidents[3]	**0**
	Workforce diversity	**Increase**
GOVERNANCE	Supplier due diligence[4]	**100%**
	Employees who have completed the Compliance and Code of Conduct training	**100%**
	Human rights incidents in our supply chain	**0**

1 – Refer to page 22 for definition of Nanofilm's ESG criteria.
2 – Production hours refer to total machine production hours.
3 – Incidents that require inpatient treatments or total permanent disability/ fatality.
4 – Refer to page 39 for description of supplier due diligence.

SUSTAINABLE **INNOVATION**

SUSTAINABLE INNOVATION

TECHNOLOGY-BASED SOLUTIONS

Since our establishment, Nanofilm has become a leading provider of nanotechnology solutions in Asia, leveraging on our proprietary technologies, our core competencies in R&D, engineering and production, to provide technology-based solutions across a wide range of industries.

Our solutions serve as key catalysts enabling our customers to achieve high value-add advancements in their end-products, in an environmentally sustainable manner by replacing precious finite base materials and extending the products' useful life.

We have shown a strong track record in acquiring and retaining customers, including market leading blue-chip end-customers. We have grown and developed alongside our customers, through our continuous focus on R&D and innovation, often with R&D initiatives being undertaken in joint collaboration with them, as well as by leveraging our strong in-house engineering and efficient production capabilities.

There is a general lack of understanding of carbon. Carbon is the second most abundant mass within the human body and the fourth most abundant element by mass in the world after hydrogen, helium and oxygen. This means carbon plays an important role in the chemical basis for all known life on earth, making underlying carbon advanced materials potentially an eco-friendly, sustainable solution for an almost limitless number of applications.

Indeed, Nanofilm has successfully commercialised our patented carbon advanced materials used across wide number of mission critical applications in multiple industries. Our carbon advanced materials, which can be processed under a room temperature vacuum coating setting, are akin to conductive diamond, carrying special material properties such as corrosion resistance, low resistivity, ion-leaching prevention, and high conductivity onto the substrate's surface, effectively overcoming existing scientific challenges and limitations, and this allows us to redraw material science boundaries. Timed with the expected explosion in adoption of new normal technological trends, i.e., high frequency electronics, flexible electronics, sensors and imaging, biomedical, energy storage and generation, our advanced materials are expected to play an important role in providing material solutions to enable such applications and mass adoption of these mega trends.

KEY STATISTICS AS AT 31 DECEMBER 2020

5.9 %

R&D AND ENGINEERING EXPENSES AS A PERCENTAGE OF TOTAL REVENUE

>70

PATENTS AND TRADEMARKS

>270

EMPLOYEES ENGAGED IN R&D AND ENGINEERING

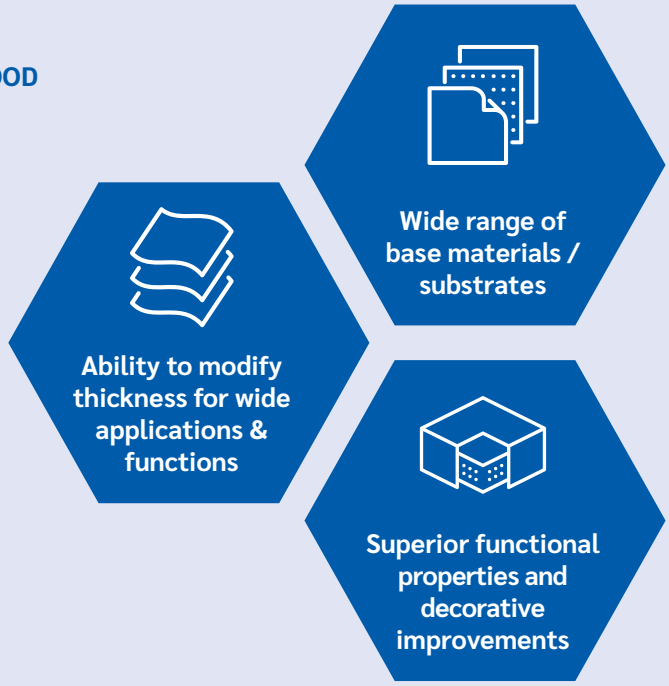
SDG IMPACT

SUSTAINABLE **INNOVATION**

OUR ADVANCED MATERIALS SOLUTION FOR SOCIAL GOOD

Our advanced materials coating processes are done in sustainable and responsible manner

COMMON MARKET ISSUES	OUR VALUE ADD
1 No suitable materials in the world for intended end product	**Our Advanced Materials are the solution**
2 Base materials with conventional coating, Inferior properties, High cost / low benefits and environmental issues	**We replace conventional coatings**
3 High cost base materials, for e.g., Gold	**We replace expensive materials**



TECHNOLOGY SUPERIORITY GROUNDED BY SCIENCE

Nanofilm technology offers significant advantages compared to conventional technologies

REDRAWS MATERIAL SCIENCE BOUNDARIES

Nanofilm technology capabilities enable deposition at room temperatures opening up new markets which others cannot access

IMPROVED PROPERTIES VS OTHERS[1]

	NANO FILM	OTHERS (1)
Hardness and strength	●	◔
Durability	●	◔
Low friction coefficient	●	◔
Corrosion resistance	●	◔
Electrochemistry properties	●	◑

(1) Such as PVD and Chemical Vapour Deposition ("**CVD**")

ACCESS TO NEW SUBSTRATES

	NANO FILM	OTHERS (1)
High melting point products	✓	✓
Plastics	✓	✗
Rubbers	✓	✗
Other low melting point products	✓	✗

SPECIFIC TECHNOLOGY EDGES

TAC-ON® (Tetrahedral Amorphous Carbon)

>85% Sp3 Diamond Content vs 25% in Others **(Conductive diamond)**

iTAC® (ThickTetrahedral Amorphous Carbon)

5x Average Life Expectancy of Piston Rings

MiCC® (Nano-crystalline chromiumnitride)

Superior Properties (Adhesion, Hardness and Low Temperature Requirements)

FCVA Metals

Superior Properties (Energy efficiency, Conductivity, low impurity)

SUSTAINABLE **INNOVATION**

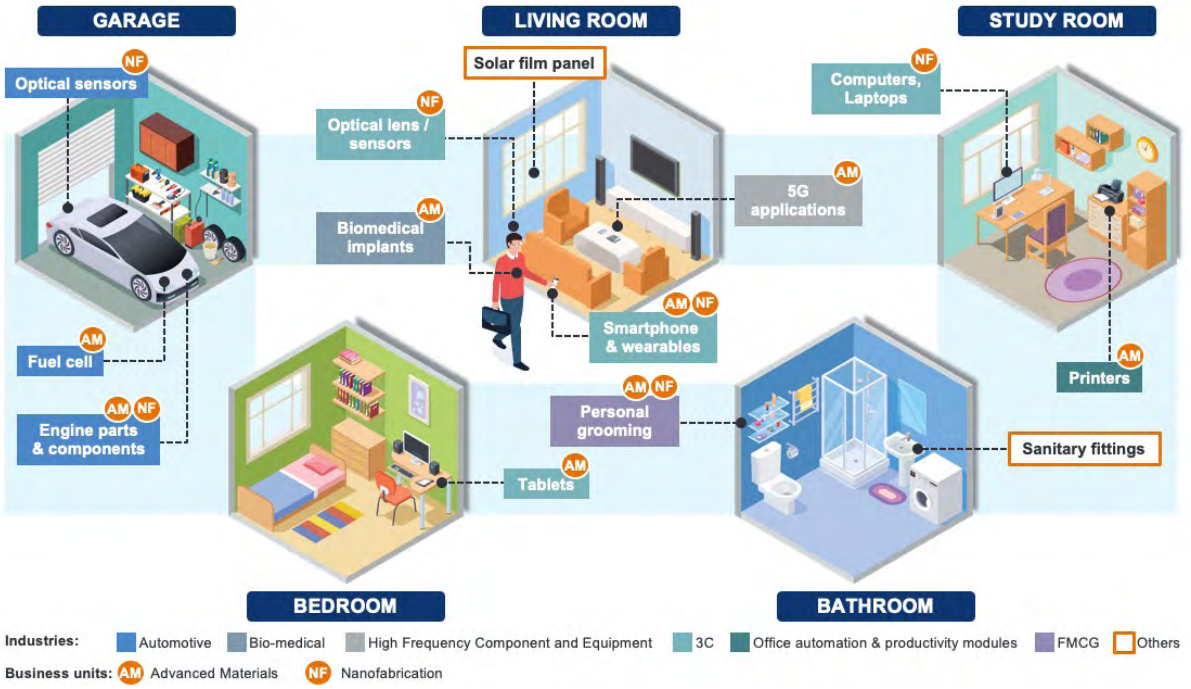
Our nanotechnology solutions are industry agnostic and are adaptable for use across a wide range of industries. This has allowed us to open up new markets which were hitherto inaccessible to conventional coating technologies. With the flexibility and advantages afforded by our proprietary technologies, we believe that we are able to re-position ourselves as necessary to tap into promising growth opportunities across our focus markets — be it in the computer, communications and consumer electronics ("3C"), automotive, new energy, biomedical, or optical lens and sensors industry.

We intend to focus on attractive and innovative future industries, which upon maturity, have the potential to constitute a large standalone business opportunity for us.

We seek to achieve technological breakthroughs, redraw the boundaries of material science to enable new end-product possibilities and develop nanotechnology solutions. Our goal is to be a future generation technology-based solutions company, with a vision of our advanced materials and nanoproducts having a societal impact, and being integrated into the modern daily lives of consumers around the world.

Currently, we hold more than 70 patents and trademarks, and have more than 270 employees engaged in research and development ("R&D") and engineering.

We believe that our products and services are integral to the smooth functioning of many of the technologies and tools which are essential to our modern daily life, as illustrated in the representation below.



In addition, we are well-positioned for multiple avenues of growth, given the flexibility and applicability of our wide range of products, through R&D initiatives being undertaken in joint collaboration with our customers, as well as by leveraging our strong in-house engineering and efficient production capabilities.

CAPTURING GREATER SHARE IN ESTABLISHED END-MARKETS

3C

Printing and imaging

Precision Engineering / HPLC Pumps / Valves

Continue to increase sales to existing customers and grow customer base

TAKE OFF IN RECENTLY ESTABLISHED END-MARKETS

Automotive

Optical Lens

Optical Sensors

Fuel Cell - Sydrogen successfully launched from Nanofilm

Ramp-up demonstrated share gains in new markets

VERTICAL & HORIZONTAL INTERGRATION

FATP, Module / End Component New Applications

Automotive

Fuel Cell Sydrogen

Optical Lens

Optical Sensors

FMCG

Leverage synergies across business segments to offer customers intergrated solutions

FUTURE NEW AREAS

FMCG Personal Grooming

Medical Lens & Devices

Biomedical

IoT optics

Opportunistically enter new markets leveraging easily adaptable nature of technology

HOW OUR TECHNOLOGY CREATES SUSTAINABILITY IMPACT

HYDROGEN ECONOMY

With the global effort to reduce carbon emissions, hydrogen is expected to play a critical role as an energy carrier and fuel source. Hydrogen, the most abundant element in the world, offers a sustainable energy source at zero carbon emission output. It can be sustainably produced by electrolysis of water with renewable energy and then converted via fuel cells to generate electricity that is cleaner and more efficient. Emitting only water, hydrogen fuel cells eliminate the emissions of carbon dioxide and other harmful pollutants. Fuel cells and electrolysers are therefore important technologies within the hydrogen supply chain for future demand. There is much potential to further enhance the efficiency and cost efficacy of fuel cells and electrolysers for the future hydrogen economy. With the underlying characteristics and positive demand-supply balance, the hydrogen economy is expected to develop at a rapid pace.

ELECTRIC VEHICLES – SURFACE SOLUTIONS FOR FUEL CELLS

- Years of research and development work had been done in the hydrogen economy space prior to our formation of the Joint Venture with Temasek. Sydrogen Energy ("**Sydrogen**") aims to apply Nanofilm's advanced materials surface solutions to critical components in fuel cell and electrolyser systems.
- Electric vehicles generally contribute to significantly lesser greenhouse gas emissions than conventional vehicles. As such, they are the way forward to protect the planet and create a healthier and more resilient world.
- With the increasing adoption of electric vehicles, there is a demand for high-performing and durable fuel cells. Fuel cells in electric vehicles require surfaces that are less susceptible to corrosion while providing high electrical conductivity. But conventional solutions (typically gold-plating) are more costly and corrosive.
- Through the application of our proprietary advanced materials surface solutions to critical components in fuel cell and electrolyser systems, Sydrogen is poised to potentially bring about a tipping point in the mass and widespread commercial adoption of these technologies.
- Our surface solutions utilise advanced materials, which are more cost-effective compared with typical gold-plating methods. It also provides properties such as high corrosion resistance and electrical conductivity.

FILTERED CATHODIC VACUUM ARC (FCVA) COATING TECHNOLOGY

- Through our FCVA coating technology, coating species are produced with much higher and more uniform energy. Even in low-temperature conditions, films that are dense, with ultra-high hardness and superior adhesion properties can be produced by FCVA coating method.
- As our coating technology uses low temperature which in turn uses less input energy, it makes the process greener as compared to conventional technology which requires a high-temperature environment.
- FCVA enables coating on plastics and rubbers, which will enable many possibilities of industrial applications which in turn increases the durability of products that uses our technology. Durable goods mean more sustainable products and leads to better consumer rights
- Nanofilm has successfully commercialised our patented carbon advanced materials used across a wide number of mission critical applications in multiple industries. Our carbon advanced materials, which can be processed under room temperature vacuum coating setting, are akin to conductive diamond, carrying special material properties such as corrosion resistance, low resistivity, ion-leaching prevention, and high conductivity onto the substrate's surface, effectively overcoming existing scientific challenges and limitations, allowing us to redraw material science boundaries. Timed with the expected explosion in adoption of new normal technological trends, i.e., high-frequency electronics, flexible electronics, sensors and imaging, biomedical, energy storage and generation, our advanced materials are expected to play an important role in providing material solutions to enable such applications and widespread adoption of these megatrends.

EFFICIENT ALLOCATION OF NATURAL RESOURCES

- Our advanced materials BU can provide coating solutions for applications to replace base materials with the required properties and characteristics (such as the copper coating on plastics, turning into plastics with copper characteristics, which is more cost and resources effective than a full copper base material).

- Our proprietary coating technology allows the use of more cost-effective metal to achieve similar properties, which in turn allows a more efficient allocation of mined natural materials (e.g., Gold, Titanium, etc.). It is also able to replace conventional coating solutions such as electroplating using wet chemical processes and PVD using higher energy sources.

GREEN AUTOMOTIVE SOLUTIONS

- The moving parts in an automobile engine are subjected to high corrosion due to the high friction coefficient between the parts. One of the biggest challenges in the industry has been the fuel or mileage efficiency improvement.

- Our FCVA coated TAC is hydrogen-free and embeds a much higher diamond content, it exhibited the best corrosion protection, super hardness, excellent anti-wear-off properties and extremely low friction with the following benefits:
  - Reduction of the CO2 emission to raise fuel efficiency
  - Control of exhaust gas low volatile substance
  - Recyclable, renewable
  - Low noise
  - Good corrosion resistance

- As such, when it is applied to moving parts in the automobile engine, specifically the piston rings, where it can increase the durability of the piston by significantly reducing the friction coefficient of the piston system, thus making them more corrosion resistance. This in turn helps to extend the useful life of the pistons, contributing to the environment as less replacement parts are then needed.

MiCC® COATING

- In semiconductor moulding operation, removing halogens such as chlorine and bromine to the level that must each be less than 900ppm has a profound impact on the moulding process.

- Our years of research has yielded MiCC® Nano-Crystalline Chrome Nitride Ceramic Coating as the winning solution to the industry.

- Conventional Chromium Plating which is Hexavalent Chromium (Cr(VI), is classified under NIOSH to be occupational carcinogens, while MiCC® is a 99.9% chrome bulk material deposited by FCVA, using a definite environmentally friendly process, making it a “Green Metal Coating” solution.

SUSTAINABLE **INNOVATION**

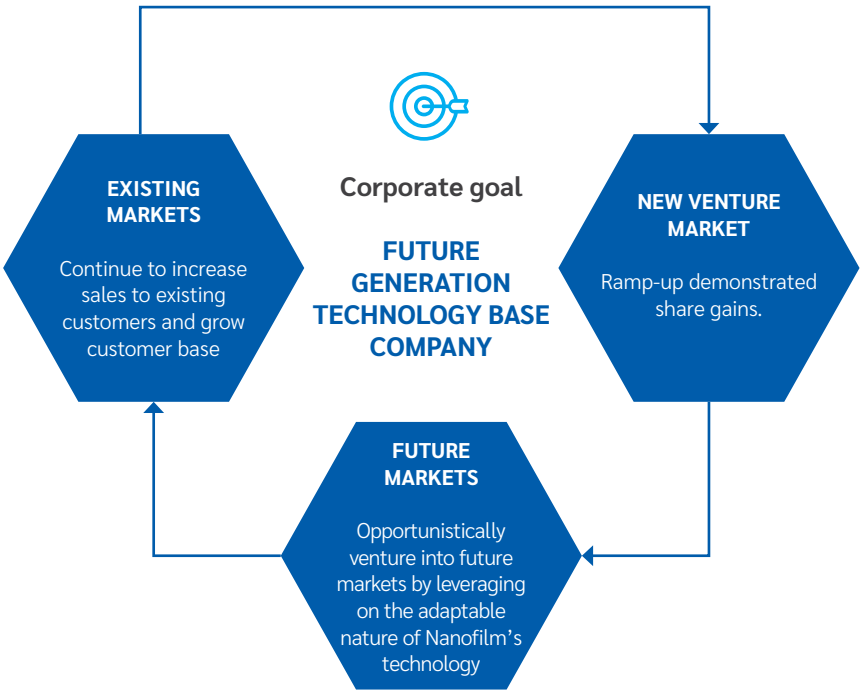
CONTINUOUS INNOVATION

We seek to improve our technology and services through constant R&D investments. In 2020, our R&D and engineering investments amounted to 5.9% of our total revenue, we target to maintain our R&D and engineering investments to greater than 5% of total revenue as we grow our company innovatively and sustainably.

We aim to maintain 100% of R&D investments in new products to cover Nanofilm's ESG criteria by 2030 as part of our commitment to innovate sustainably. Nanofilm's ESG criteria are defined as innovation that does not violate any rules and regulations concerning safety, environment, human rights, child labour, anti-bribery and anti-corruption, and seek to improve the lives of our end-customers through the use of our innovative and environmentally-friendly products.

We also aim to improve our domain knowledge library through the publishing of research papers by our scientists, and conduct fundamental research in material science.

As continuous innovation is key to our success, we have laid down our strategy to safeguard our in-house technology and intangible assets*



Current Primary Intangible Assets
Key drivers to sustain Nanofilm as the technology leader in advanced materials and nanotechnology space

- **Patents**
- **Trade Secrets**
- **Know-how**

Current Secondary Intangible Assets
Enablers to support Nanofilm maintain its competitive advantage in the market

- **Partnerships and Networks**
- **Branding and Reputation**
- **Regulatory Approvals**
- **Copyright**

HOW WE CATEGORISE OUR INTANGIBLE ASSETS*

RELATIONAL CAPITAL	ORGANISATIONAL CAPITAL	HUMAN CAPITAL
The value inherent in an organisation's relationships with its customers, vendors, suppliers, business partners and other important constituencies.	Business processes, data and systems that enable organisation to deliver products and services and create value.	The value that the employees of a business provide through the application of their skills, competencies, knowledge, etc.

* Based on Intangible Asset Portfolio review conducted by IPOS International

OPERATIONAL EXCELLENCE

As part of our vision to be a future generation technology solutions company, we strive for operational excellence, and believe our strong and robust management systems and operational processes allow us to achieve this.

At Nanofilm, customer satisfaction is crucial to creating long-term value for our stakeholders. Quality products and on-time delivery are key to maintaining customer satisfaction. Our production facilities are also ISO9001:2015 certified to ensure we maintain high quality of production. This will help create a positive working relationship, thereby enabling Nanofilm to retain its existing customers and invite new business opportunities.

Our Operational Excellence Suite covers aspects on manufacturing operational systems (MES, QTS, PTS), LEAN system thinking, process transformation, customer engagement, talent management, sustainability, and technology, and guides the day-to-day operation of our business.

INDUSTRY 4.0

Our goal is to move towards Industry 4.0 (i.e., the Fourth Industrial Revolution) in our manufacturing operations. Industry 4.0 envisages a further digitisation of our manufacturing operations to further transform our production sites into smart factories.

We have already taken steps towards this goal, with, among others, our implementation of our MES, QTS, PTS and SAP systems. In the near to medium term, we intend to further enhance our smart manufacturing processes and plan to further use robotics and automation in our manufacturing lines, including remote diagnostics tools to assist in inspecting coating quality.

OUR OPERATIONAL EXCELLENCE FRAMEWORK

Industry 4.0 manufacturing operations

LEAN system thinking

Process transformation

Customer engagement strategy

Talent development, retention, and social responsibility

KEY STATISTICS AS AT 31 DECEMBER 2020

375

COMPLETED LEAN PROJECTS

SDG IMPACT

SUSTAINABLE **INNOVATION**

OUR GOAL TO MOVE TOWARDS INDUSTRY 4.0 IN OUR MANUFACTURING OPERATIONS

INDUSTRY 4.0 EXPLORATION

Innovation → Design → Production → SCM → Service

DEVELOPMENT INTELLIGENCE

Global collaborative development

3D visualization | Modular design & standardisation | Collaboration development

Product intelligence

Remote control | Intelligent diagnosis

MANUFACTURING INTELLIGENCE

Digitised manufacturing process design | Manufacturing process intelligence | Robot & automation | Lean | Inspection with AI

Strategy & management

Global collaborative operation | Budget | Global collaborative HR | BI

Collaborative SCM

Traceability

SERVICE INTELLIGENCE

Remote diagnosis | Spare parts

- Already done
- Undergoing implementation / optimisation
- In the planning phase

SUPPORT MANUFACTURING MORE EFFICIENTLY

Common Activities Captured in Manufacturing Execution System (MES)

- Managing Process Orders & WIP
- Managing Material
- Managing Labor
- Managing Equipment
- Managing Quality

DEMONSTRATED VALUE CREATION

13%
Total Cost Per Unit Reduction

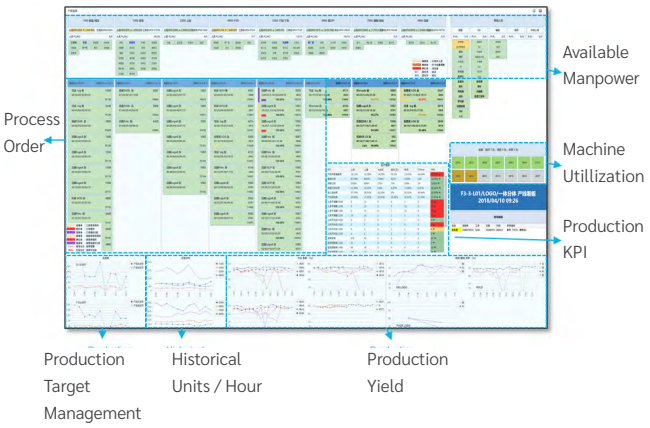
7%
Improve Manufacturing Cycle Time

6%
Improve Overall Equipment Effectiveness

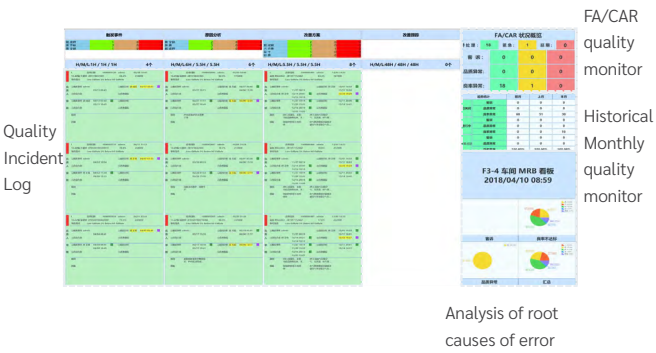
40%
Reduction in Lead Time to Procure Supplies

REAL TIME MONITORING OF KEY METRICS

MES DASHBOARD



QUALITY TRACKING DASHBOARD



CONTINUOUS IMPROVEMENT

We strongly believe in the benefits of further digitisation, connectivity, and automation in our production processes and intend to leverage on proven disruptive technologies/software as enablers.

LEAN SYSTEM THINKING

- We introduced LEAN System Thinking in mid-2017, as a structured and systematic problem-solving approach to reduce variations in production quality and eliminate waste.
- We embarked on our LEAN System Thinking journey to stay ahead of our competition and ensure that our customers pay for the value-add that our nanotechnology solutions can provide, and not for any waste.
- Under our LEAN System Thinking, our management personnel and employees are encouraged to identify gaps and deficiencies, as well as waste, within our manufacturing and production process and propose action plans to resolve the identified issue.
- Once approved by our "LEAN Experts" (being key management personnel who have undergone specialised training), we would implement such action plans with the aim of reducing waste within our manufacturing processes, achieving improvements in quality while reducing production time and cost.
- In FY2020, we completed 375 LEAN projects, cover processes such as reducing cycle time of our industrial equipment, machine improvement and improving the yield and quality of our manufacturing processes. Since FY2017, over 400 LEAN projects have been completed.

SUSTAINABLE **INNOVATION**

PROCESS TRANSFORMATION

- We have also established a systematic approach to improve our manufacturing processes. Our process transformation approach involves simplifying our manufacturing process, before the introduction of automation to enhance efficiency.

- Process simplification is our design technique where we identify the individual task which forms each manufacturing process. Our management teams then observe each task to detect and correct redundant or wasteful actions, so as to achieve productivity improvements among our employees. We would then seek to introduce an optimal level of automation to further improve the efficiency of the manufacturing process. We have a structured approach to introducing automation, which comprises the following:

1. Identify the manufacturing process which we believe can benefit from further automation, including formulating management systems to ensure system control;

2. Establish risk and opportunity management procedures, to identify risks that may be involved with any further automation, and corresponding countermeasures to take;

3. Develop criteria, methods, measurements and related performance indicators to enable management to assess the benefits of such automation; and

4. Put in place a programme to periodically monitor and analyse our manufacturing process, to assess whether the intended benefits of automation have been achieved and decide if further improvements are needed.

CUSTOMER ENGAGEMENT STRATEGY

We have in place a formal customer engagement strategy. In addition to on-time delivery and product quality, we focus on ensuring seamless interaction with our customers, with the goal of reducing customer touchpoints so that customer feedback and complaints can be swiftly escalated to the responsible personnel. We actively keep track of customer complaints and feedback, and incidence of late deliveries.

Our customer engagement strategy is summarised below:

WORD OF MOUTH

- Leverage on strong reputation and positive feedback from existing customers
- Sales teams organised by industry to provide targeted solutions that address unique challenges
- Concentrate on key account management to strengthen existing customer relationships

EXPANSION OF VERSIONS AND VOLUMES TO EXISTING CUSTOMERS

- Cross-selling solutions to other projects of existing customers
- Co-development on other products of existing customers to increase wallet share

NEW CUSTOMER ACQUISITION

- Regularly attend trade shows and industry events to increase exposure, branding and presence in new industries / with new customers
- Leverage on sales teams' network of industry contacts

ENVIRONMENT

ENVIRONMENT

As economic and population growth increases the level of global consumption, our society is faced with environmental challenges and is required to use energy and resources more efficiently. In order to achieve sustainable growth, a company must not only pursue economic value but also address important environmental problems.

ENVIRONMENTAL REGULATORY COMPLIANCE

Our factories are fully compliant with the environmental laws and regulations in the countries that we operate in, and follow internationally recognised standards. The Group has established an Environment Management System that is based on the principles of ISO14001:2015 (Environmental Management), focusing on reduction of energy and resource consumption and proper waste management.

Our factories have been ISO14001:2015 certified since August 2016. This reinforces our commitment towards environmental protection, reducing carbon emissions, preventing pollution, and minimising waste.

In addition, we are also subject to regular and annual ESG audits performed by our global customers. In FY2020, Nanofilm has been subjected to two ESG audits from our customers, and met all their requirements.

MANAGING OUR CARBON FOOTPRINT

We are committed to positive action on climate change and dedicated to reducing the carbon emission in our daily operations. To determine our carbon footprint, we collect energy usage data from each our businesses and then calculate our total annual greenhouse gas emissions.

We follow the Greenhouse Gas Protocol established by the World Resources Institute and the World Business Council for Sustainable Development, the standard manual for measuring corporate greenhouse gas emissions. Using the "control method", we include 100% of the emissions associated with businesses which we directly control. Our carbon footprint includes:

- All fuels used directly by our companies (Scope 1 emissions)
- All purchased electricity used in our factories (Scope 2 emissions)

KEY STATISTICS AS AT 31 DECEMBER 2020

0

ENVIRONMENTAL REGULATORY COMPLIANCE INCIDENTS

46.1 tCO_2e

CARBON FOOTPRINT INTENSITY PER 1,000 MACHINE PRODUCTION HOURS

307.7 m^3

WATER CONSUMPTION INTENSITY PER 1,000 MACHINE PRODUCTION HOURS

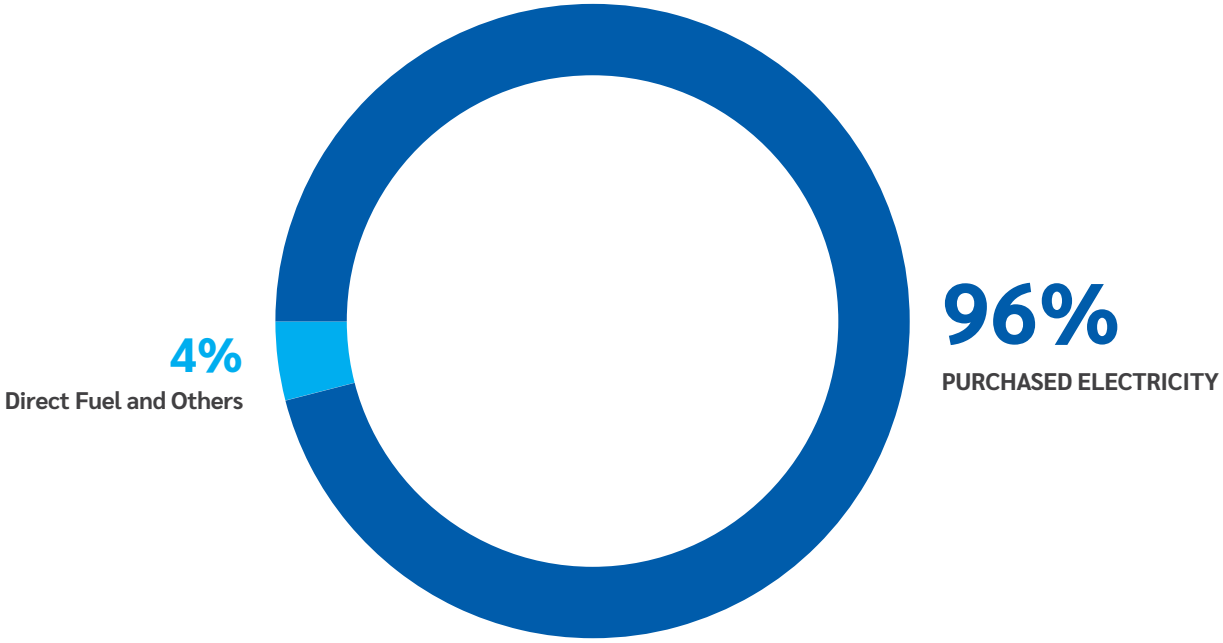
2

ESG AUDITS FROM CUSTOMERS

58.0 MWh

ENERGY CONSUMPTION INTENSITY PER 1,000 MACHINE PRODUCTION HOURS

SDG IMPACT



In FY2020, Nanofilm generated a carbon footprint of 43,890.6 tonnes of carbon dioxide emission (tCO2e), with a carbon footprint intensity of 46.1 tCO2e per thousand machine production hours. The emission mainly arises from purchased electricity used in our properties which accounted for more than 96% of the total carbon emission of Nanofilm. The rest of the emissions are due to direct fuels used for power generators and vehicular transport (using petrol or diesel).

The Group will still continue with our efforts to optimize eco-efficiency at our operations. By 2030 we aim to reduce 30% of our carbon dioxide emission per output and we will monitor the performance of our carbon footprint reduction and report our progress every year.

ENERGY EFFICIENCY

Manufacturing factories are energy-intensive structures and electricity often constitutes a significant proportion of operating expenses, as in the case of Nanofilm.

In FY2020, Nanofilm consumed 55.2 gigawatt-hours (**GWh**) of electricity, with an energy consumption intensity of 58.0 megawatt-hours (**MWh**) per thousand machine production hours. Energy consumption resulting from purchased electricity in our operations generates more than 96% of our GHG emissions and is one of our largest operating costs. We will constantly invest in and monitor our energy efficiency to protect the environment and lower the costs of operations.

ENERGY FROM RENEWABLE SOURCES

Apart from managing our energy consumption, we also seek to consume energy from renewable sources to reduce our carbon footprint. By investing in energy efficiency, we not only help protect the environment but can also lower our financial costs. We are ramping up on our efforts to install solar panels at our manufacturing facilities and target to have 50% of our energy consumption to be from renewable sources or purchased carbon credits by 2030.

ENVIRONMENT

WATER CONSERVATION AND RECYCLING

Water scarcity is a growing concern around the world and a serious global challenge that we must work together to address. We have adopted a wide range of measures to reduce water consumption at our factories, installing water-efficient fittings and raising awareness of water scarcity issues among our employees.

In FY2020, Nanofilm recorded a total water consumption of 324,471 cubic metres (m^3), of which 292,855 m^3 is used for production. This translates to an intensity of 307.7 m^3 per thousand machine production hours. By 2030, we aim to reduce 80% of our wastewater discharge from production per output and we will monitor our performance and report our progress every year.

In China, 100% of the water discharged from production are treated. We have invested significantly over the years in evaporative wastewater fittings and a system that allows us to treat wastewater. We are furthering our investments in a water recycling system that allows us to recycle and reuse water discharged from production. We aim to bring this good practice from our China production facilities to the rest of our operations globally, with the aim of having zero wastewater discharge from our production eventually.

In Singapore, wastewater discharge is monitored and sent for lab testing periodically to ensure that it is within the National Environment Agency ("**NEA**") guidelines. We are also in the process of installing the wastewater fittings and systems to ensure that we recycle our wastewater so as to have zero wastewater discharge from production in the future.

WASTE MANAGEMENT

Waste materials from the production process are not significant and mostly non-hazardous. Any waste engine oils and materials recovered from maintenance of machinery will be aggregated in an isolated container and disposed through proper industrial disposal channels. In 2020, there's a total of 176 tonnes of waste being generated from our operation, of which less than 10% is hazardous and had been properly disposed according to strict local guidelines.

SOCIAL

SOCIAL

We have a comprehensive performance appraisal programme and rewards system based on the result of the appraisal. The performance appraisal programme is essential for us to understand the skills level of employees and any appropriate training programmes that can be designed to close up the skill gaps.

We emphasise on the career path and progression of our employees, and have built several two-way communication channels to ensure that the career development needs of our employees are taken into consideration whenever possible. Training opportunities are equal to all employees based on the needs identified.

Through these efforts, we are well-positioned to provide a constructive working experience to our employees and contribute to the economic development and skilled labour resources of the local community.

Talent Development and Retention

We believe people are the cornerstone of our business and invest in talent development and staff training to continuously upgrade the skills of our employees, both for their own benefit and our long-term prospects. We have in place an in-house talent training and development system known as "Nanofilm College".

Nanofilm College is led by our Chief Executive Officer, who is assisted by a Dean and Director of Training. The structure of our Nanofilm College is set out in the chart below.

KEY STATISTICS AS AT 31 DECEMBER 2020

18.0
TRAINING HOURS PER STAFF

92%
EMPLOYEES SUBJECT TO REGULAR PERFORMANCE APPRAISAL IN SINGAPORE

57%
EMPLOYEES SUBJECT TO REGULAR PERFORMANCE APPRAISAL IN CHINA

39,479
TRAINEE HOURS PROVIDED BY NANOFILM COLLEGE

36%
FEMALE REPRESENTATION IN THE WORKFORCE

0
DISASTER INCIDENTS

SDG IMPACT

OVERVIEW OF NANOFILM COLLEGE TRAINING PROCESS

Nanofilm College is a structured training and development system which commences once a new employee joins our Group, and begins with an orientation and on-the-job training. It continues throughout his progression in our Group, and includes specialised training for promotions.

PROMOTION & DEVELOPMENT

- Recommend suitable employees for promotion by looking at role matchings, track records and past results of employees

TALENT POOL & REVIEW

- Result, Capabilities, Quality assessment
- Potential and trends
- Development and training mechanism

COMMUNICATION & FEEDBACK

- Performance review
- Job application assessments
- Development and training mechanisms
- Salary adjustments
- Job objectives

TALENT SELECTION

- From the talent pool review, via qualifications and assessments, select excellent core employees

Nature & Development

- Self learning
- OJT
- Role expansion
- Programme participation
- Training & job rotation

As at 31 December 2020, Nanofilm College offers over 100 training courses across the following course categories: (a) Procurement & Supply Chain Management, (b) LEAN Production Management, (c) R&D, (d) Standard & Internal Auditing, (e) General Management Skill, (f) Environment Health and Safety and (g) Quality.

Our training programmes are designed to ensure that our employees are competent in their roles and responsibilities, and include both technical and professional training, as well as training designed to develop the management qualities of our employees.

In 2020, Nanofilm college has provided training for more than 7,000 trainees, this translates to a total of 39,479 trainee hours and we aim to reach 60,000 trainee hours annually by 2030 as part of our commitment for employees training and development. We have invested an average of 18.0 hours of training on each employee, showing the Company's commitment to ensure employee's skill competency.

As part of our people strategy, Nanofilm has committed to increase our training hours per employee to 24 hours by 2030. We will progressively improve this and monitor our progress yearly.

SOCIAL

MANAGING OCCUPATIONAL HEALTH AND SAFETY

At Nanofilm, we strive to ensure a healthy, safe and supportive workplace environment by implementing occupational health and safety initiatives. Our Shanghai factories comply with the requirements of ISO45001:2019 (Occupational Health and Safety). In addition, our Shanghai Plant 1 achieved a "Safety Production Standardisation Level 3" affirmation in FY2017.

As part of our strategy, Nanofilm has committed to achieving zero disaster incidents at the workplace, i.e., incidents that require inpatient treatments or total permanent disability/ fatality. In FY2020, there were no total permanent disability and fatality incidents in our factories.

Each of our subsidiaries has established a Health and Safety Committee for the following purposes:

- To develop and monitor occupational safety systems and procedures
- To provide an opportunity for management and employees to work together to identify and resolve workplace health and safety issues
- To ensure that employees are given a channel to voice their concerns on health and safety matters.

In FY2020, the Health and Safety Committees in each subsidiary helped to raise awareness on the importance of safety compliance and provide employees with an opportunity to share best practices on various matters such as:

- Accident and investigation reporting procedures
- Compliance with government regulations on health and safety
- Fire drill evacuation procedures
- Workplace safety matters
- Factory cleanliness matters

PERFORMANCE APPRAISAL

To ensure the Company achieves its goals, we have various performance appraisal methods in place to determine the performance of the Company as well as each individual employee.

The employee performance appraisal comprises mainly quantifiable evaluation criteria. In addition, we actively collect performance information for each employee through inputs from direct supervisors, as well as periodical employee communication sessions.

The collected information allows us to understand the performance and skills development needs of each team and individual employee from multiple aspects. This is crucial for the Company to develop annual training programmes for employee that are designed to enhance the skills of the employee and aims to improve the overall productivity.

In 2020, 92% of our employees in Singapore and 57% of our employees in Shanghai are subjected to an annual performance appraisal by their superiors. We seek to improve this practice in the coming year.

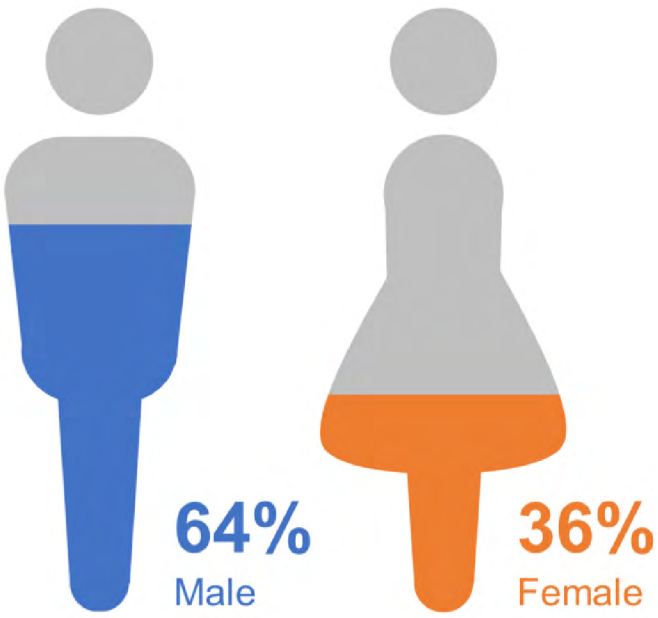
WORKFORCE DIVERSITY AND EQUAL OPPORTUNITY

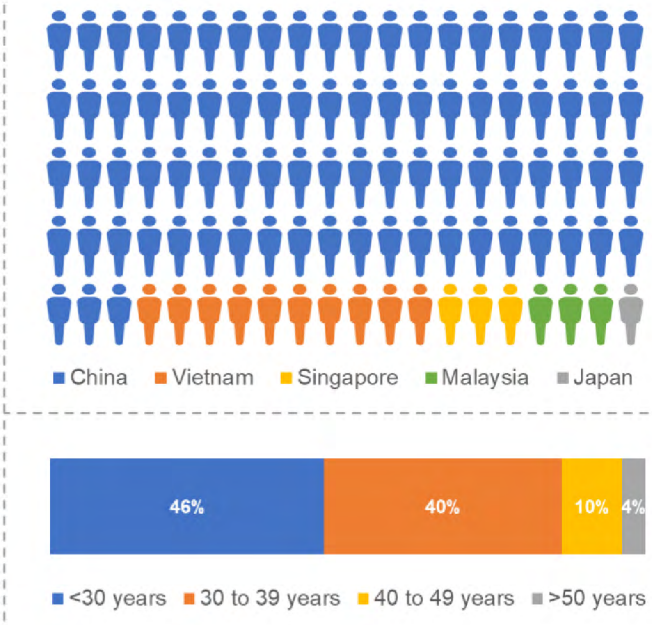
Nanofilm has always been an equal opportunity employer to provide a fair workplace for employees, following the principles of equality and non-discrimination. Recruitment, remuneration, promotion, and benefits are required to be handled based on objective assessment, equal opportunity and non-discrimination regardless of gender, race, marital status, pregnancy, disability, age or family status.

We attract talent through a fair and flexible recruitment strategy that includes recruitment application, job description, job applications, interview, selection, approval, and job offer. Promotion is based on performance and suitability.

We offer competitive remuneration to attract and retain talented staff members. Remuneration packages (which include the necessary social benefits) are reviewed periodically to ensure consistency with the employment market. Any dismissal also complies with employment laws and regulations relating to non-discrimination.

We value workforce diversity as we believe each individual brings about different experiences that will allow them to contribute meaningfully to Nanofilm. We constantly track our workforce diversity closely and ensure that we offer equal opportunity regardless of any employees' background. In FY2020, our workforce diversity is documented as per below, we will continue to track and monitor our workforce diversity and report these statistics every year. We are committed to improve the overall workforce diversity as a group going forward.





SOCIAL

EMPLOYEES WELFARE AND ENCOURAGING WORK-LIFE BALANCE

We adopt a 360-degree approach and adhere to one of the best-in-class frameworks to take care of our employees' needs and well-being. On top of offering great working conditions, we ensure that high quality hygiene and living standards are maintained in our dormitories as well as the staff canteen in our Shanghai facility. We conduct periodic employee surveys to gather feedback and seek continuous improvement on the quality of our staff facilities.

We are also on track to implementing a "6 days @ 9 hours" schedule in our production floor to encourage more work-life balance. We have in place a robust manpower planning policy to ensure that our employees enjoy a balanced work-life culture while keeping operations efficient. We are committed to maintain our good employee welfare practices and seek further improvements as we expand.

Prior to COVID-19, we have been organising a variety of employee activities to help them relax their mind and body, develop teamwork, and explore their talent, so as to develop a positive attitude in both work and life. While this has been temporarily stopped during FY2020 in view of social distancing guidelines, we will no doubt be resuming these activities when it is safe to do so.

COMMUNITY INVOLVEMENT

We are committed to drive positive and sustainable change for our communities, particularly for vulnerable and underserved groups, in the geographies where we operate.

Employment is an important means of providing fair and equitable opportunities to persons with disabilities because it gives them a sense of identity, inclusivity, purpose, and social connectedness.

To highlight one of our community involvement practices, we are committed to support persons with disabilities through our inclusive hiring practices. In FY2020, we have employed more than 20 employees with disabilities across different functions as part of our workforce. We have also conducted periodical engagement with this special group to hear any challenges they face at work and ensure that their well-being and safety at work are taken care of. To commend our initiatives in employing from the handicapped community, we have also been recognized by the local Chinese Handicapped Union.

We are committed to increase the employment of handicapped personnel as part of our workforce inclusivity culture and we hope to inspire others in the industry to also do so.

GOVERNANCE

GOVERNANCE

MANAGEMENT APPROACH

We are meticulous in our approach to governance. Our governance structure ensures that we monitor and quantify compliance, manage risk as well as maintain customers' and society's confidence and trust.

Under our CEO's active direction and in collaboration with our Board of Directors and its committees responsible for performance and compliance review, we hold ourselves to the highest standards of economic, environmental and societal performance as well as compliance with laws, regulations, and corporate policies that govern our operations and practices worldwide.

We have internally appointed a chief sustainability officer to chair the sustainability team, to provide leadership and direction on the sustainability strategy. The sustainability team is also supported by other expert functions such as Supply chain, HR, finance, procurement, marketing, R&D, operations and legal.

SYSTEMS AND POLICIES

Sustainability is an integral part of the corporate culture and behaviour in our business.

We have established Group-wide procedures to ensure compliance with legal and regulatory standards as well as internal standards, including our code of conduct. This oversight includes training, communication and consulting activities designed to provide all employees with the information and resources necessary to fulfil their responsibilities and understand their role in ensuring ethical compliance and behaviour.

We have invested significant resources to ensure that we have a robust compliance and integrity platform and will continue to refine our approach to promote ethical behaviour and integrity both within our organisation and in the entities with which we have relationships with.

Our compliance and integrity programme has three pillars:

1. **Prevention**: Enforce policies, code of conduct, risk assessment and internal controls metrics when we onboard new employees and periodically during their tenure.

2. **Early detection**: Whistle-blowing hotline is in place and we ensure that we investigate each reported incident. Internally we have continuous compliance reviews, controls and internal audits to ensure we pick up any irregularities early.

3. **Response:** Disciplinary action on compliance breaches, process adaptation, resolution plans, and remediation of internal control systems. We are committed to continuously fine-tune the policies to seek further improvements going forward.

We aim to maintain for 100% of our employees to complete the compliance code of conduct training and for existing employees to stay up to date on the latest group-wide compliance and code of conduct through periodic compulsory training.

KEY STATISTICS AS AT 31 DECEMBER 2020

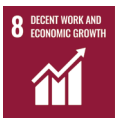
0

HUMAN RIGHTS INCIDENTS IN OUR SUPPLY CHAIN

49%

SOURCED FROM LOCAL SUPPLIERS

SDG IMPACT



SUPPLY CHAIN DUE DILIGENCE

At Nanofilm, we require our factories to provide fair working hours, a safe work site and an environment free from discrimination regardless of a person's job or location. We also expect our factories to have in place responsible sourcing policies for all our raw materials in use. Naturally, we will also expect our suppliers to do the same.

We conduct due diligence screening before onboarding our suppliers to ensure that there are no human rights violations and our raw materials are ethically-sourced (e.g., zero tolerance for bribery and corruption, and responsibly-sourced raw materials from non-conflict areas). BUs also make sure that they source from the approved list of suppliers who are subsequent to internal reviews periodically based on our due diligence criteria.

There are also anti-bribery and environmental agreements with our critical vendors to ensure that they continue to be in compliant with our policies as we engage in a long-term relationships with them.

PROCUREMENT PRACTICES

Procurement is structured in a hybrid manner. For decentralized localized purchases, each subsidiary is responsible for selecting its own vendors. While some procurement decisions are controlled by the customer, others are usually based on price, availability and reliability of vendors. We are also working towards a system for centralised purchases of standard and higher frequency items, where purchases are controlled by Materials Requirements Planning ("**MRP**") through master supply arrangements with approved suppliers.

By purchasing from local vendors, the Group benefits from a shorter delivery time, better technical support and transportation savings from local procurement instead of overseas deliveries. Procuring from domestic markets also helps to boost the local economy and reduce our carbon footprint. In FY2020, 49% of our purchases were sourced from local suppliers.

HUMAN RIGHTS VIOLATION

We are committed to a safe work environment that is free from and provides for protection against human trafficking and slavery, including forced labour and unlawful child labour.

We do not condone human trafficking or slavery in any parts of our organisation. We have also been working closely with our customers to ensure that we carry out frequent reviews to prevent incidents of human rights violations within the organisation.

We also conduct supply chain due diligence to ensure that our suppliers do not have incidents of human rights and child labour violation. Our employees in the procurement team are trained to conduct a proper audit on our suppliers before we onboard them.

BUSINESS CONTINUITY

The emergence of COVID-19 has had a significant impact on businesses and communities globally. The Group's operations are distributed across Singapore, China, Japan and Vietnam.

In demonstrating our solidarity to join the authorities' efforts to control the pace of the spread of COVID-19, the Group has complied with the directives from local governments in the various jurisdictions. In addition, the Group has instituted precautionary measures to protect the health and safety of its employees. We have also initiated business continuity planning to protect our staff and mitigate the impact on the Group's business operations.

We will monitor the local situation and will put in place practices and any additional controls as required by the local governments (e.g., quarantine measures, stop work orders) where applicable. As the current COVID-19 situation continues to evolve, we shall keep a close eye on our operations, and announce any material changes to our business performance to shareholders on a timely basis, as and when appropriate.

SUSTAINABILITY **SCORECARD**

RESULTS

PERFORMANCE INDICATORS	UNITS	FY2020
Revenue	S$'million	218

SUSTAINABLE INNOVATION

PERFORMANCE INDICATORS	UNITS	FY2020
R&D and engineering expenses	Percentage	5.9
Patents and trademarks	Number	>70
Employees engaged in R&D and engineering	Number	>270
Completed LEAN projects	Number	375

ENVIRONMENT

PERFORMANCE INDICATORS	UNITS	FY2020
Environmental regulatory compliance incidents	Number	0
ESG audits from customers	Number	2
Total carbon footprint	tCO_2e	43,890.6
Carbon footprint intensity	tCO_2e/ 1,000 machine production hours	46.1
Total energy consumption	MWh	55,155.2
Energy consumption intensity	MWh/1,000 machine production hours	58.0
Total water consumption	m^3	324,471
Total water consumption from production	m^3	292,855
Water consumption intensity from production	m^3/1,000 machine production hours	307.7

SOCIAL

PERFORMANCE INDICATORS	UNITS	FY2020
Training per staff	Hours	18.0
Training provided by Nanofilm College	Hours	39,479
Disaster incidents	Number	0
Employees subject to regular performance appraisal (SG)	Percentage	92
Employees subject to regular performance appraisal (CN)	Percentage	57
Female representation in workforce	Percentage	36

GOVERNANCE

PERFORMANCE INDICATORS	UNITS	FY2020
Human rights incident in supply chain	Number	0
Sourcing from local suppliers	Percentage	49

GRI INDEX

The GRI Content Index references the Nanofilm Technologies Ltd Sustainability Report 2020 (SR), and the Annual Report 2020 (AR).

DISCLOSURE NUMBER		DISCLOSURE TITLE	PAGE REFERENCE AND REMARKS
GRI 102: General disclosures			
Organisational profile	102-1	Name of organisation	• AR: Corporate Profile (Page 1)
	102-2	Activities, brands, products, and services	• AR: Corporate Profile (Page 1)
	102-3	Location of headquarters	• AR: Corporate Profile (Page 1)
	102-4	Location of operations	• AR: Corporate Profile (Page 1) • AR: Investment in Subsidiaries – Note 14 to the Financial Statements (Pages 114-118) • AR: Investment in Associated Company – Note 15 to the Financial Statements (Page 119)
	102-5	Ownership and legal form	• AR: General Information – Note 1 to the Financial Statements (Page 80)
	102-6	Markets served	• AR: Operating Segment Information – Note 29 to the Financial Statements (Pages 149-151)
	102-7	Scale of organisation	• AR: Corporate Profile (Page 1) • AR: Operating Segment Information – Note 32 to the Financial Statements (Pages 144-148)
	102-8	Information on employees and other workers	• SR: Social (Pages 31-36)
	102-9	Supply chain	• SR: Governance (Pages 37-39)
	102-10	Significant changes to the organisation and its supply chain	• AR: Corporate Profile (Page 1) • AR: Our Business (Pages 2-3) • AR: Key Milestones (Pages 16-18) • AR: Financial Highlights (Pages 20-22)
	102-11	Precautionary Principle or approach	• AR: Corporate Governance (Pages 33-63)
	102-12	External initiatives	• Not applicable
	102-13	Membership of associations	• Not applicable
Strategy	102-14	Statement from senior decision-maker	• AR: Financial & Operations By CEO (Pages 23-25) • SR: Chairman's Message (Pages 5-7)
	102-15	Key impacts, risks, and opportunities	• AR: Independent Auditor's Report (Pages 72-74)
Ethics and integrity	102-16	Values, principles, standards, and norms of behavior	• SR: Approach to Sustainability (Pages 8-13)
	102-17	Mechanisms for advice and concerns about ethics	• AR: Corporate Governance (Pages 33-63)
Governance	102-18	Governance structure	• AR: Corporate Governance (Pages 33-63)
	102-19	Delegating authority	• AR: Corporate Governance (Pages 33-63)
	102-20	Executive-level responsibility for economic, environmental, and social topics	• SR: Approach to Sustainability (Pages 8-13)
	102-21	Consulting stakeholders on economic, environmental, and social topics	• SR: Approach to Sustainability (Pages 8-13)
	102-22	Composition of the highest governance body and its committees	• AR: Corporate Governance (Pages 33-63)

GRI INDEX

DISCLOSURE NUMBER		DISCLOSURE TITLE	PAGE REFERENCE AND REMARKS
	102-23	Chair of the highest governance body	• AR: Corporate Governance (Pages 33-63)
	102-24	Nominating and selecting the highest governance body	• AR: Corporate Governance (Pages 33-63)
	102-25	Conflicts of interest	• AR: Corporate Governance (Pages 33-63) • AR: Directors' Statement (Pages 62-64) • SR: Approach to Sustainability (Pages 8-13)
	102-26	Role of highest governance body in setting purpose, values, and strategy	• AR: Corporate Governance (Pages 33-63)
	102-27	Collective knowledge of highest governance body	• AR: Corporate Governance (Pages 33-63)
	102-28	Evaluating the highest governance body's performance	• AR: Corporate Governance (Pages 33-63)
	102-29	Identifying and managing economic, environmental, and social impacts	• SR: Approach to Sustainability (Pages 8-13)
	102-30	Effectiveness of risk management processes	• AR: Corporate Governance (Pages 33-63)
	102-31	Review of economic, environmental, and social topics	• SR: Sustainability Report (Pages 1-44)
	102-32	Highest governance body's role in sustainability reporting	• SR: Approach to Sustainability (Pages 8-13)
	102-33	Communicating critical concerns	• SR: Approach to Sustainability (Pages 8-13)
	102-34	Nature and total number of critical concerns	• SR: Approach to Sustainability (Pages 8-13)
	102-35	Remuneration policies	• AR: Corporate Governance (Pages 33-63)
	102-36	Process for determining remuneration	• AR: Corporate Governance (Pages 33-63)
	102-37	Stakeholders' involvement in remuneration	• AR: Corporate Governance (Pages 33-63)
	102-38	Annual total compensation ratio	• AR: Corporate Governance (Pages 33-63)
	102-39	Percentage increase in annual total compensation ratio	• AR: Corporate Governance (Pages 33-63)
Stakeholder engagement	102-40	List of stakeholder groups	• SR: Approach to Sustainability (Pages 8-13)
	102-41	Collective bargaining agreements	• Not applicable
	102-42	Identifying and selecting stakeholders	• SR: Approach to Sustainability (Pages 8-13)
	102-43	Approach to stakeholder engagement	• SR: Approach to Sustainability (Pages 8-13)
	102-44	Key topics and concerns raised	• SR: Approach to Sustainability (Pages 8-13)
Reporting practice	102-45	Entities included in the consolidated financial statements	• AR: Investment in Subsidiaries – Note 14 to the Financial Statements (Pages 114-118) • AR: Investment in Associated Company – Note 15 to the Financial Statements (Page 119)

DISCLOSURE NUMBER		DISCLOSURE TITLE	PAGE REFERENCE AND REMARKS
	102-46	Defining report content and topic Boundaries	• SR: Approach to Sustainability (Pages 8-13)
	102-47	List of material topics	• SR: Approach to Sustainability (Pages 8-13)
	102-48	Restatements of information	• Not applicable
	102-49	Changes in reporting	• Not applicable
	102-50	Reporting period	• SR: Approach to Sustainability (Pages 8-13)
	102-51	Date of most recent report	• Not applicable
	102-52	Reporting cycle	• Annual
	102-53	Contact point for questions regarding the report	• SR: Approach to Sustainability (Pages 8-13)
	102-54	Claims of reporting in accordance with the GRI Standards	• SR: Approach to Sustainability (Pages 8-13)
	102-55	GRI content index	• SR: GRI Content Index (Pages 41-44)
	102-56	External assurance	• No external assurance
GRI 200: Economic disclosures (applicable sections only)			
Economic performance	201-1	Direct economic value generated and distributed	• AR: Financial Highlights (Pages 20-22)
Procurement practices	204-1	Proportion of spending on local suppliers	• SR: Governance (Pages 37-39)
Anti-corruption	205-3	Confirmed incidents of corruption and actions taken	• There are no incidences of corruption in relation to the Group's business.
Anti-competitive behavior	206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	• There are no incidences of legal actions for anti-competitive behavior, anti-trust, and monopoly practices.
GRI 300: Environment disclosures (applicable sections only)			
Energy	302-1	Energy consumption within the organisation	• SR: Environment (Pages 27-30)
	302-4	Reduction of energy consumption	• SR: Environment (Pages 27-30)
Water	303-1	Water withdrawal by source	• SR: Environment (Pages 27-30)
Emissions	305-1	Direct (Scope 1) GHG emissions	• SR: Environment (Pages 27-30)
	305-2	Energy indirect (Scope 2) GHG emissions	• SR: Environment (Pages 27-30) • SR: Sustainability Scorecard (Page 40)
Effluents and waste	306-2	Waste by type and disposal method	• SR: Governance (Pages 37-39) • SR: Environment (Pages 27-30)
Laws and regulations	307-1	Non-compliance with environmental laws and regulations	• There is no non-compliance with environmental laws and regulations.
GRI 400: Social disclosures (applicable sections only)			
Employment	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	• SR: Social (Pages 31-36)

GRI INDEX

DISCLOSURE NUMBER		DISCLOSURE TITLE	PAGE REFERENCE AND REMARKS
Occupational health and safety	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	• SR: Social (Pages 31-36)
Training and education	404-1	Average hours of training per year per employee	• SR: Social (Pages 31-36)
	404-2	Programmes for upgrading employee skills and transition assistance programmes	• SR: Social (Pages 31-36)
	404-3	Percentage of employees receiving regular performance and career development reviews	• SR: Social (Pages 31-36)
Diversity and equal opportunity	405-1	Diversity of governance bodies and employees	• SR: Social (Pages 31-36)
Non-discrimination	406-1	Incidents of discrimination and corrective actions taken	• There are no incidents of discrimination.
Child labor	408-1	Operations and suppliers at significant risk for incidents of child labor	• Child labour is strictly prohibited.
Forced or compulsory labor	409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	• Forced and compulsory labour is strictly prohibited.
Socioeconomic compliance	419-1	Non-compliance with laws and regulations in the social and economic area	• There is no non-compliance with socioeconomic laws and regulations.