

Singapore

ADD (no change)

Consensus ratings*: Buy 5 Hold 4 Sell 0

Current price:	S\$2.33
Target price:	S\$3.07
Previous target:	S\$3.07
Up/downside:	31.8%
CGS-CIMB / Consensus:	-5.3%

Reuters:	NANO.SI
Bloomberg:	NANO SP
Market cap:	US\$1,100m
	S\$1,532m
Average daily turnover:	US\$2.01m
	S\$2.76m
Current shares o/s:	659.7m
Free float:	45.4%

*Source: Bloomberg

Key changes in this note

➤ No changes.



Source: Bloomberg

Price performance	1M	3M	12M
Absolute (%)	-6.4	-13.7	-57.6
Relative (%)	-2.2	-3.8	-56.7

Major shareholders	% held
Pearl Yard Holdings	38.6
Venezio Investments	7.3

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Nanofilm Technologies Int'l Ltd

A look at ESG

- Nanofilm released its second Sustainability Report (SR) on 20 May 2022.
- Some Environment, Social and Governance (ESG) data points for FY21 were revealed and 2030 goals were set for certain ESG factors.
- Reiterate Add. Its Sydhrogen (clean, renewable energy exposure) business segment offers exposure to the E pillar in the ESG framework.

Second sustainability report released

According to Nanofilm's 2021 SR released on 20 May 2022, Nanofilm owns more than 80 patents and trademarks, not including over 40 applications that are pending. The group has more than 300 employees worldwide engaged in Research and Development (R&D) and engineering and has achieved a daily turn-around capacity of more than 5.0m high volume and high mix parts. This is Nanofilm's second sustainability report. The Board, CEO and senior management of Nanofilm oversee the management and monitoring of the Economic, Environment, Social and Governance (EESG) aspects of the group. Nanofilm has stated that sustainability has been and will always be an integral part of its strategy. Nanofilm's SR was prepared with reference to the Global Reporting Initiative, which is widely accepted as a global standard for sustainability reporting. Nanofilm also set its targets with reference to the United Nations Sustainable Development Goals.

2030 ESG goals

Nanofilm is working towards zero waste water discharge from its factories. In Shanghai where the bulk of its manufacturing is located, the group has completed the installation of reverse osmosis filtration systems to recycle the water used in production activities. The group will work towards implementing this at its other production sites in the subsequent years. We note that Nanofilm's Industrial Equipment and Sydhrogen business segments support the Environmental pillar in EESG and Nanofilm has revealed EESG goals for 2030 (more overleaf).

Governance pillar can be improved

In our view, the Governance pillar of Nanofilm's ESG can be improved. We note that, post its listing, there have been three C-suite level resignations (Chief Executive Officer, Chief Operating Officer and Chief Human Resources Officer). Of these three departures, its Chief Human Resources Officer joined Nanofilm in Aug 2021 and will be leaving the company on 24 Jul 2022.

Reiterate Add

We value Nanofilm at 23.5x P/E (-1 s.d. from its P/E multiple over Oct 2020-Jun 2022) on our FY23F EPS forecast, leading to a TP of S\$3.07. We reiterate our Add call given its long term earnings growth prospects. Potential re-rating catalysts include new order wins from customers and market share gains. Downside risks are high customer concentration and persistent component shortages.

Financial Summary	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Revenue (S\$m)	218.3	246.7	288.7	338.3	382.9
Net Profit (S\$m)	57.62	62.20	70.54	86.05	97.30
Core EPS (S\$)	0.09	0.09	0.11	0.13	0.15
Core EPS Growth	45.7%	0.2%	13.3%	22.0%	13.1%
FD Core P/E (x)	24.73	24.71	21.79	17.86	15.80
Price To Sales (x)	6.53	6.22	5.32	4.54	4.01
DPS (S\$)	-	0.020	0.027	0.033	0.037
Dividend Yield	0.00%	0.86%	1.15%	1.40%	1.58%
EV/EBITDA (x)	13.77	15.62	12.88	10.59	9.13
P/FCFE (x)	99.45	NA	54.89	42.39	24.85
Net Gearing	(42.6%)	(20.0%)	(30.0%)	(29.2%)	(31.6%)
P/BV (x)	3.56	3.58	3.19	2.81	2.48
ROE	20.9%	14.5%	15.5%	16.7%	16.7%
% Change In Core EPS Estimates			0%	0%	0%
CGS-CIMB/Consensus EPS (x)			0.91	0.95	0.93


SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

A look at ESG

Industrial Equipment Business Unit (IEBU) ►

Nanofilm's IEBU manufactures and sells turnkey equipment systems, ranging from coating equipment to auxiliary equipment, such as cleaning lines to automation systems. Nanofilm provide customers who purchase such equipment customised operating software, training, spare parts and other forms of after-sales support. In this BU, Nanofilm also sells Cadmium Telluride (CdTe) thin film surface solution and production equipment for solar cells to customers.

Figure 1: Nanofilm CdTe equipment

<p>In-line coating equipment for CdTe Solar Films</p> 	<ul style="list-style-type: none"> • CdTe solar films are thin films used in solar panels for buildings. • However, it is expensive to coat solar modules with conventional coating technologies. • We worked with a solar company in China to design and develop customised production lines for solar panels. 	<ul style="list-style-type: none"> • In 2008, we started developing an FCVA in-line coating equipment for our customer, which is customised for our customer's CdTe thin film solar cell production line. • Our coating equipment lowered the cost of coating solar modules. We believe that our equipment has contributed to the enablement of mass production and adoption of solar panels.
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SOURCES: COMPANY REPORTS

Hydrogen economy (Sydrogen)

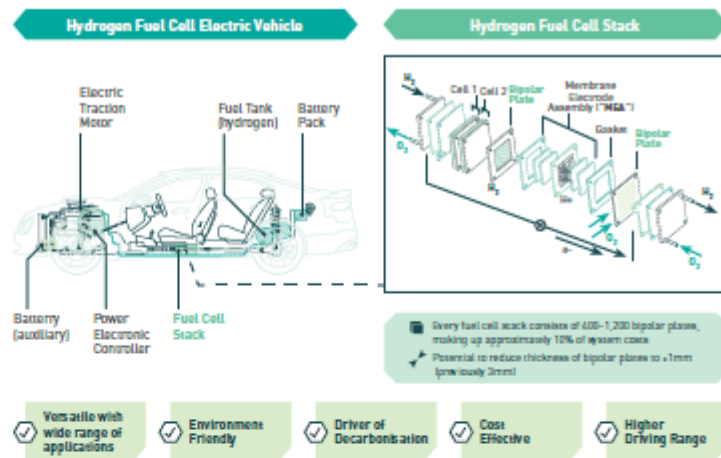
As the world pushes for decarbonisation, many industries are looking to hydrogen as the fuel to meet their energy requirement and achieve their carbon targets. As the most abundant element on earth, hydrogen offers a sustainable energy source with zero carbon emission. Hydrogen can be sustainably produced by the electrolysis of water with renewable energy and thereafter converted via fuel cells to generate electricity that is cleaner. Emitting only water and heat, hydrogen fuel cells eliminate the emissions of carbon dioxide and other harmful pollutants into the environment. Fuel cells and electrolyzers are important technologies within the hydrogen supply chain.

In October 2021, Nanofilm formed a joint venture, Sydrogen Energy Pte Ltd (Sydrogen), with Temasek to explore opportunities in the hydrogen economy utilising Nanofilm's unique surface solutions technologies, which can be used to coat critical components in fuel cells and electrolyser systems.

Sydrogen is focusing its efforts on commercialisation of the adoption of its advanced coating process for the key components of the proton-exchange membrane fuel cell (PEMFC) stack systems. Nanofilm's solution is to coat the metallic bipolar plates (BPP) used in the PEMFC. This is a more scalable and cost-effective solution versus alternatives, such as using graphite for the PEMFC. Nanofilm notes that a fuel cell stack can contain 400-1200 bipolar plates and could make up c.10% of the system cost. Its coating technology also has the potential to reduce the thickness of the bipolar plates to less than 1mm from 3mm previously.

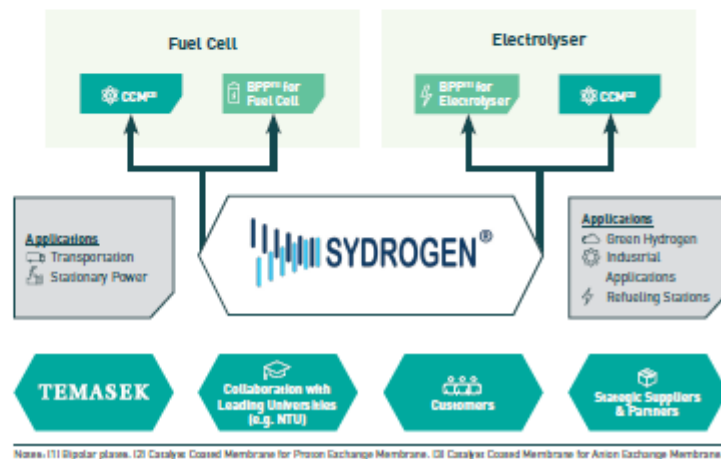
Figure 2: Fuel cell dynamics

THE FUEL CELL IS AT THE HEART OF HYDROGEN



SYDROGEN'S ROADMAP

Our entry points enabling vertical integration



SOURCES: COMPANY REPORTS

Sustainable innovation >

In FY21, Nanofilm's R&D spend amounted to 7.1% of its revenue. This is above the 5.0% target that Nanofilm has set for itself. Nanofilm aims to maintain R&D spend above 5.0% of revenue p.a. into 2030. The company has also ensured that all its R&D efforts do not violate any rules and regulations involving safety, environment, human rights and child labour while holding anti-bribery and anti-corruption stances. The company has committed to upholding this approach in its R&D activities. According to Nanofilm, the R&D team grew by more than 10% yoy in FY21.

Operational excellence >

To reduce the impact of its operations on the environment, Nanofilm's operational excellence is achieved via the below systems:

- Manufacturing Execution System (MES);
- Quality Tracking System (QTS);
- Project Tracking System (PTS).

According to its SR, LEAN system thinking (Nanofilm completed 373 LEAN systems projects covering processes such as reducing cycle time for its IEBU and

improving maintenance downtime, amongst others), process transformation, customer engagement, sustainability and technology guide the everyday operations at Nanofilm. Its facilities are certified ISO9001:2015 Quality Management System and the group is now progressing towards its Industrial 4.0 goal (SAP software was implemented group-wide in FY21). Nanofilm is also looking to further increase the use of robotics and automation in its manufacturing process where feasible.

Environment pillar – what has Nanofilm done ➤

Nanofilm's aim is to keep its impact on the environment and climate as low as possible. To achieve this, Nanofilm has:

- a) Implemented ISO14001:2015 Environmental Management System since 2016 (in FY21, there was no non-compliance with environmental laws or regulations);
- b) Aimed to reduce 30% of its greenhouse gas (GHG) intensity by 2030;
- c) Increased its usage of energy from renewable sources;
- d) Reduced water consumption at its factories; and
- e) Used licensed third-party vendors for the responsible disposal of hazardous and non-hazardous waste.

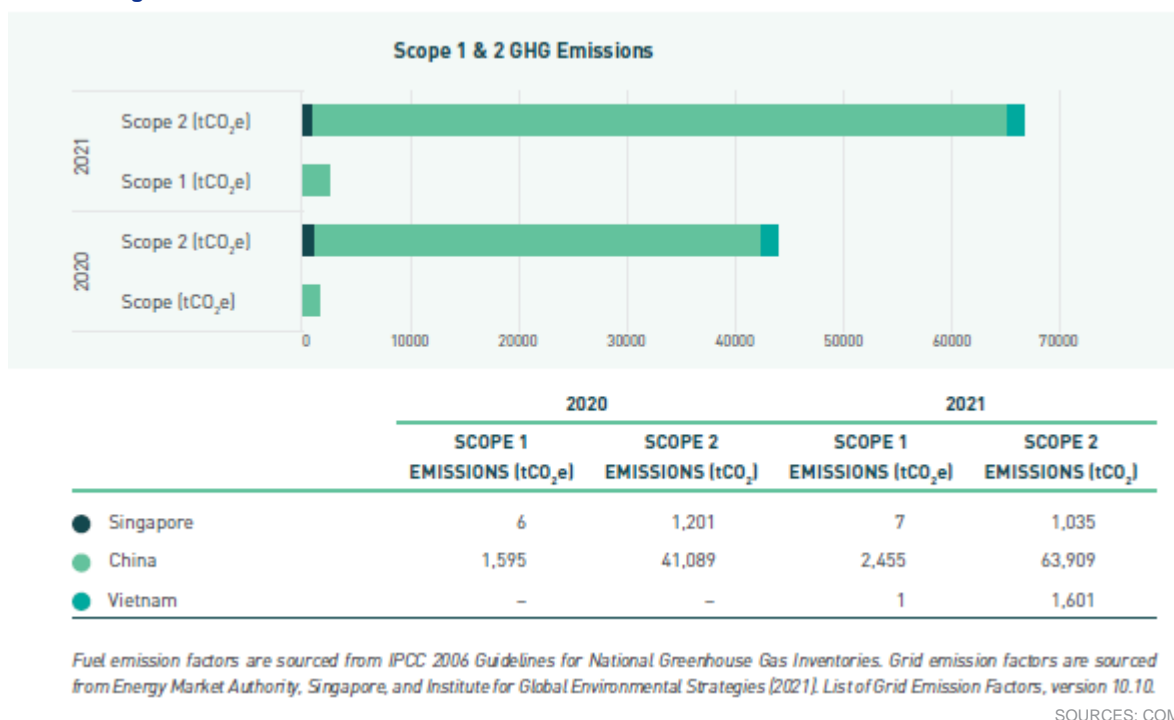
Carbon footprint. In FY21, Nanofilm generated a total of 69,007 tonnes of carbon dioxide equivalent (tCO₂e) from its operations in Singapore, China and Vietnam. Scope 1 (Scope 1 emissions are direct GHG emissions that occur from sources that are controlled or owned by an organization, e.g. emissions associated with fuel combustion in boilers, furnaces, vehicles GHG emission was 2,463 tCO₂e or 4% of overall GHG emission. This was due to the temporary use of diesel power generators to support the energy requirements of its new Shanghai Plant 2 as there was a delay in connecting to the government power grid. Since May 2021, the connection to the Shanghai government power grid was completed and hence Nanofilm does not expect to see a recurrence of an increase in Scope 1 GHG emission.

Scope 2 GHG emission (66,544 tCO₂e, 96% of overall GHG emission in FY21) is largely attributable to purchased electricity used by Nanofilm's factories. Nanofilm's Scope 2 GHG emission was 52% higher than FY20 due to the increase in manufacturing output (in China) and the inclusion of Scope 2 GHG emission data from Vietnam.

By intensity, FY21 GHG emission intensity was 52.1 tCO₂e per thousand machine production hours, an increase of 13% versus 46.1 tCO₂e per thousand machine production hours in FY20.

Nanofilm has committed to monitoring and improving its GHG emission performance with the aim of reducing its GHG intensity by 30% by 2030.

Figure 3: Greenhouse gas emission



Renewable energy sources. Nanofilm is ramping up its efforts to install solar panels at its manufacturing facilities and targets to source 50% of its energy consumption from renewable sources or purchased carbon credits by 2030.

Water conservation and recycling efforts. In FY21, Nanofilm used 516,280 cubic metres (m³) of water, all obtained from third-party sources. 489,809 m³ of water was used for production (versus 292,855 m³ in FY20) due to the higher production volume in China and the inclusion of Vietnam's data. The waste water discharge intensity in FY21 was 273.3 m³/000 production hours, a reduction of 9% from FY20. By 2030, Nanofilm aims to reduce its waste water discharge intensity by 80%. The group has committed to reporting on this progress annually. We also note that, in its major production site in China, 100% of the waste water discharged from production is treated and the group has invested in an evaporative system that reduces waste water discharge.

Waste management. Waste materials generated by Nanofilm is mostly non-hazardous. In FY21, 413 tonnes of waste were generated from its operations in China and Vietnam. The increase, approximately twice that of FY20, was due to the higher production volume in China and the inclusion of the data from Vietnam. Hazardous waste accounted for 34% of the total waste generated in FY21 and arose mostly from waste cleaning solutions and emulsions from the plants in China. Such waste is disposed of by licensed third-party vendors.

Social pillar – what has Nanofilm done ➤

Nanofilm has a comprehensive performance appraisal programme and believes in talent retention and development. The group has an in-house talent training and development system known as "Nanofilm College", which is led by its Chief Executive Officer, assisted by a Dean and Director of Training. Nanofilm College offers over 200 training courses across various categories and provided 84,456 trainee hours in FY21, exceeding Nanofilm's annual target of 60,000 trainee hours.

Nanofilm has set a target of an average of 24 training hours per employee, which the group exceeded in FY21 with an average of 26.5 training hours per employee.

In FY21, all its employees in China and Singapore received their annual performance appraisal.

In terms of workforce diversity and equal opportunity, 57%/43% of Nanofilm's employees were male/female in FY21. The group has also adopted an inclusive hiring approach and employed 23 individuals with disabilities in support operations, such as administrative, procurement and finance, in its Shanghai plant.

Where occupational health and safety is concerned, Nanofilm's Shanghai and Singapore sites are certified ISO45001:2019 (Occupational Health and Safety Management System). Vietnam is not currently certified to this level though it has in place a Safety, Health and Environment Management System. Although there were no workplace fatalities in FY21, the group has noticed an increase in the number of reportable injuries and lost days and will be rolling out more safety awareness programmes in 2022.

Figure 4: Nanofilm college structure



SOURCES: COMPANY REPORTS

Figure 5: Workplace injury data

	FY2020	FY2021
Workplace Injury Rate (per 100,000 persons)	461.82	523.40
Total Recordable Injury Rate (TRIR) (per 100 workers)	0.45	0.43
Accident Frequency Rate (per 1,000,000 hours worked)	1.89	2.14
Accident Severity Rate (per 1,000,000 hours worked)	64.68	65.32

SOURCES: COMPANY REPORTS

Governance pillar – what has Nanofilm done ►

Under the active direction of the Chief Executive Officer and in collaboration with the Board of Directors and the committees responsible for performance and compliance review, Nanofilm holds itself to the highest standards of EESG and compliance with the relevant laws, rules and regulations that governs its operations. Internally, the group has appointed a sustainability leader to chair the sustainability team and to provide leadership and direction on the sustainability strategy. Nanofilm has affirmed that sustainability is an integral part of its corporate culture and behaviour.

Nanofilm aims for 100% of its new employees to complete the compliance code of conduct training and for existing employees to stay up-to-date on its latest group-wide compliance requirements and code of conduct through periodic compulsory training. Also, in FY21, Nanofilm did not have any cases of legal actions relating to anti-competitive behaviour, anti-trust and monopoly practices.

Human rights. Nanofilm does not condone human trafficking or slavery and works closely with its customers to carry out frequent reviews to prevent incidences of human rights violations within the organisation. The group also conducts supply chain due diligence to ensure that its suppliers do not have any incidents of human rights and child labour violations.

C-suite level changes ►

In FY21, there were two major C-suite changes: a) the 23 June 2021 resignation announcement of 60-year-old CEO, Mr. Lee, due to health reasons, and b) the 13 August 2021 resignation announcement of 59-year-old Mr. Ricky Tan due to internal reorganisation. In FY22, on 8 June 2022, Nanofilm announced the resignation (citing personal reasons) of its 46-year-old Chief Human Resources Officer, Mr. Sean Tan. Sean joined the group in August 2021. The human resource function will be overseen by the CEO, the existing human resource leaders and the team of 38 human resource personnel as well as the functional heads within Nanofilm.

Figure 6: C-suite level changes

Name	Designation	Comments	Date resignation announced
Mr Lee Liang Huang	CEO	Designated CEO in November 2017	23 June 2021
Mr Ricky Tan Chong Ho	COO	Joined on 11 May 2020 as Senior Vice President, Operations. Re-designated as COO on 11 August 2020.	13 August 2021
Mr Sean Tan Chee Kwong	CHRO	Joined in August 2021	8 June 2022

Conformance to Apple standards ➤

In its 2021 supplier list, Apple Inc (AAPL US, Not Rated) listed Nanofilm (Vietnam and China manufacturing sites) as its supplier. We note that to be an Apple supplier, Nanofilm has to adhere to Apple's standards required of its suppliers. In 2005, Apple developed its Apple Supplier Code of Conduct and the Supplier Responsibility Standards to establish standards for working conditions at its manufacturing suppliers' facilities, aligned with international labour and human rights standards, including those from the International Labour Organization (ILO), the United Nations Guiding Principles on Business and Human Rights (UNGPs), the Organisation for Economic Co-operation and Development (OECD), as well as industry-leading health and safety organisations.









Apple's approach is to hold itself and its suppliers accountable every step of the way, from product design through recycling and everything in between. Its requirements apply across the supply chain, regardless of the goods, labour, or services a supplier provides to Apple; the scope continues to evolve as Apple evolves into new lines of business.

Figure 7: Nanofilm's stakeholder engagement framework

STAKEHOLDERS	HOW DO WE LISTEN?	WHAT ARE YOU TELLING US?	WHAT ARE WE DOING?
CUSTOMERS AND STRATEGIC BUSINESS PARTNERS	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Continue to develop innovative solutions that are mission critical in nature Establish green factory Ensure business continuity 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Employee's survey and interactions Internal updates and communication Events and functions 	<ul style="list-style-type: none"> Provide training and education Manage occupational health and safety Maintain work life balance 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Regular updates and communication Reports and compliance Periodical meetings with government bodies Dialogue with government bodies 	<ul style="list-style-type: none"> Contribute to regulatory landscape shaping as a market participant 	<ul style="list-style-type: none"> 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, BANKERS, MEDIA, AND ANALYSTS	<ul style="list-style-type: none"> SGX Announcements Shareholder's meeting Annual reports Company's website Regular updates and communication 	<ul style="list-style-type: none"> Long-term profitability Sustainability matters Group's performance against targets Compliance with all relevant requirements 	<ul style="list-style-type: none"> Committed to delivering economic value to our capital providers through a sustainable financial and non-financial performance Regular and effective communication
STAKEHOLDERS	HOW DO WE LISTEN?	WHAT ARE YOU TELLING US?	WHAT ARE WE DOING?
SUPPLIERS, VENDORS	<ul style="list-style-type: none"> Periodic supplier's assessment Supplier's meetings 	<ul style="list-style-type: none"> Ability to meet Company's quality standards Ability to meet Company's delivery timelines 	<ul style="list-style-type: none"> Periodic suppliers' assessment to ascertain quality of product and services acquired to ensure that they are free from hazardous substances and able to meet company's quality standards Supply chain due diligence to ensure our suppliers do not have incidents of human rights and child labour violation

SOURCES: COMPANY REPORTS

Figure 8: Nanofilm's ESG targets versus FY21 performance

SUSTAINABILITY FOCUS AREAS	OUR CONTRIBUTION TO THE SDGS	OUR PERFORMANCE IN 2021	2030 TARGET
 Sustainable Innovation		100% portion of total R&D spend meets Nanofilm's ESG criteria ¹	100%
		7.1% R&D and engineering expenses as a percentage of total revenue	>5%
 Environment		52.1 tCO ₂ e/ ¹⁰⁰⁰ production hours	Reduce 30% tCO ₂ e/ ¹⁰⁰⁰ production hours ²
		0% of energy from renewable sources	50%
		Wastewater discharged: 272.3m ³ / ¹⁰⁰⁰ production hours	Reduce 80% m ³ / ¹⁰⁰⁰ production hours
 Social		Average of 26.5 training hours/employee	24 Hours/employee
		84,156 Trainee hours	60,000 Trainee hours
		Zero disaster incidents ³	0
 Governance		In FY2021, approximately 43% of our employees are females, a 7% increase compared to FY2020.	Increase
		Human rights due diligence screening carried out on 100% of our suppliers	100%
		100% new employees completed the Compliance and Code of Conduct training	100%
		Zero human rights incidents in our supply chain	0

- 1 Nanofilm's ESG criteria are defined as innovation that does not violate any rules and regulations concerning safety, environment, human rights, child labour, antibribery and anti-corruption, and seek to improve the lives of our end-customers through the use of our innovative and environmentally-friendly products.
- 2 Production hours refers to machine production hours.
- 3 Incidents that require inpatient treatments or result in total permanent disability/fatality.

SOURCES: COMPANY REPORTS

Figure 9: Nanofilm's FY21 sustainability score card

[FY2021 includes performance from Vietnam site, which were excluded in FY2020's compilation]



RESULTS

PERFORMANCE INDICATORS	UNITS	FY2020	FY2021
Revenue	S\$'million	218	247



SUSTAINABLE INNOVATION

PERFORMANCE INDICATORS	UNITS	FY2020	FY2021
R&D and engineering expenses	Percentage	5.9	7.1
Patents and trademarks	Number	>70	>80
Employees engaged in R&D and engineering	Number	>270	>300
Completed LEAN projects	Number	375	373



ENVIRONMENT

PERFORMANCE INDICATORS	UNITS	FY2020	FY2021
Environmental regulatory compliance incidents	Number	0	0
ESG audits from customers	Number	2	2
Total Scope 1 & 2 GHG emissions	tCO ₂ e	43,891	69,007
Scope 1 & 2 GHG intensity	tCO ₂ e/ 1,000 machine production hours	46.1	52.1
Total energy consumption	GJ	219,898	322,344
Energy consumption intensity	GJ/ 1,000 machine production hours	231.0	243.4
Total water consumed ⁶	m ³	324,471	516,820
Total water consumption from production	m ³	292,855	489,809
Wastewater discharge intensity from production	m ³ / 1,000 machine production hours	300.7 ⁷	273.3



SOCIAL

PERFORMANCE INDICATORS	UNITS	FY2020	FY2021
Training per staff	Hours	18.0	26.5
Training provided by Nanofilm College	Hours	39,479	84,156
Disaster incidents	Number	0	0
Employees subject to regular performance appraisal (SG)	Percentage	92	100
Employees subject to regular performance appraisal (SH)	Percentage	57	100
Female representation in workforce	Percentage	36	43



GOVERNANCE

PERFORMANCE INDICATORS	UNITS	FY2020	FY2021
Human rights incident in supply chain	Number	0	0
Sourcing from local suppliers	Percentage	49	72

SG: Singapore

SH: Shanghai

⁶ The total water consumed refers to water consumed from our production sites and water from the workers' dormitories.

⁷ This was previously reported as water consumption intensity of 307.7m³/ 1,000 machine production hours in our SR 2020. This has now been restated as wastewater discharge intensity from production.

SOURCES: COMPANY REPORTS



ESG in a nutshell

Nanofilm Technologies Int'l Ltd (Nanofilm) is a deep technology company offering advanced materials and filtered cathodic vacuum arc (FCVA) coating technologies. The company has a strong commitment to ESG and sustainable production methods. Nanofilm was awarded Frost & Sullivan's 2021 Asia Pacific Technology Innovation Leadership Award and Deloitte's Best Managed Companies Singapore 2021, underscoring the company's ESG commitment and environmentally friendly production process (as compared to conventional coating technologies in the market).

Upcoming events to watch out for include Nanofilm's JV with Temasek in Sydrogen Energy, where it will be providing advanced materials surface solutions to critical components in fuel cell and electrolyser systems.

Keep your eye on	Implications
<p>Nanofilm has a JV with Temasek, named Sydrogen Energy, in the hydrogen energy economy to apply its advanced materials surface solutions to critical components in fuel cell and electrolyser systems. Hydrogen fuel cells are more environmentally friendly as they generate electricity without emitting carbon dioxide or other harmful pollutants (unlike other conventional energy sources).</p>	<p>This is positive if the JV can successfully garner market adoption and reach a commercial scale, which will open up a new revenue stream for Nanofilm.</p>
ESG highlights	Implications
<p>Nanofilm was awarded Frost & Sullivan's 2021 Asia Pacific Technology Innovation Leadership Award. According to Frost & Sullivan, FCVA and FCVA hybrid coating technologies and production processes do not require high heat and can perform vacuum coating deposition at room temperature in an environmentally friendly manner as compared to conventional coating technologies in the market. Nanofilm was also named one of the inaugural winners of Deloitte's Best Managed Companies Singapore 2021 award, underscoring its commitment to ESG.</p>	<p>This highlights that Nanofilm's FCVA-based coating methods are differentiated from conventional coating methods in the market on both technology and environmental fronts. In our view, as customers increasingly take into account environmental considerations in their production processes, Nanofilm's more environmentally friendly technology and processes are an attractive solution. This could raise the demand for its coating services, driving higher revenue and earnings.</p>
Trends	Implications
<p>According to Nanofilm, all of its factories are fully compliant with the environmental laws and regulations in the countries that they operate in. Nanofilm is committed to environmental protection, reducing carbon emissions, preventing pollution, and minimising waste. In addition, Nanofilm is subject to regular and annual ESG audits performed by its global customers. In FY21, Nanofilm was subjected to two ESG audits from its customers, and met all their requirements.</p>	<p>In FY21, Nanofilm generated a total of 69,007 tonnes of carbon dioxide equivalent (tCO₂e) from its Singapore, China and Vietnam operations. Its Scope 1 emissions amounted to 2,463 tCO₂e or approximately 4% of the overall GHG emissions while Scope 2 emissions were 66,544 tCO₂e or approximately 96% of the overall GHG emissions. The increase in Scope 1 emissions in FY21 was due to diesel consumption for the use of diesel power generators to support power required for Shanghai Plant 2 and equipment qualification in view of project commencements. During this time, the group's application to the Chinese Municipal Government for high tension power to meet Shanghai Plant 2's requirements had taken longer than expected. Since May 2021, the new Shanghai Plant 2 completed its connection to the government's power grid, reverting to normalised utility tariffs. Nanofilm will continue to monitor the emissions intensity for the various sites and improve the efficiency of its operational processes, with an aim to reduce 30% of its GHG intensity by 2030 as per its FY21 SR.</p>

SOURCES: CGS-CIMB RESEARCH, REFINITIV

Figure 10: Global peer comparison

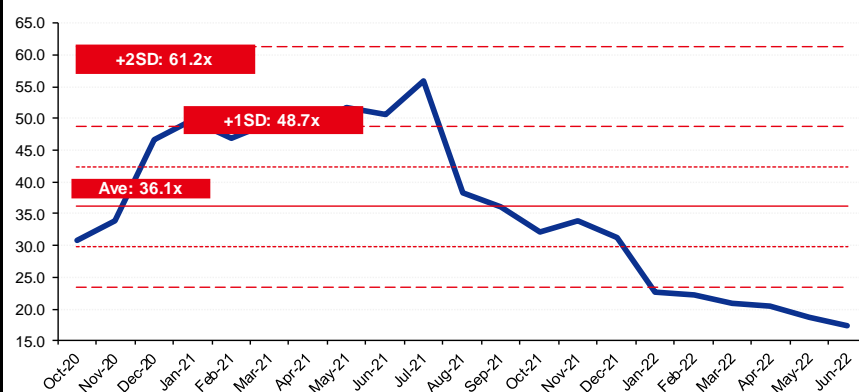
Company	Bloomberg Ticker	Recom.	Price (lcl curr)	Target Price (lcl curr)	Market Cap (US\$ m)	P/E (x) CY22F	P/E (x) CY23F	3-year EPS CAGR (%)	P/BV (x) CY22F	Recurring ROE (%) CY22F	Dividend Yield (%) CY22F
Materion Corp	MTRN US	NR	73.73	NA	1,508	14.8	12.4	na	1.97	14.7%	na
Entegris Inc	ENTG US	NR	92.13	NA	12,519	21.5	19.1	19.6%	5.60	27.5%	0.4%
Rogers Corp	ROG US	NR	262.1	NA	4,928	36.3	28.0	na	na	na	na
3M Co	MMM US	NR	129.4	NA	73,642	12.1	11.5	4.9%	4.67	39.4%	4.6%
PPG Industries Inc	PPG US	NR	114.3	NA	27,001	16.4	13.2	17.1%	3.91	24.2%	2.1%
CMC Materials Inc	CCMP US	NR	174.5	NA	4,992	22.8	21.8	240.9%	na	23.2%	1.0%
Element Solutions Inc	ESI US	NR	17.80	NA	4,409	11.4	9.8	33.2%	1.68	15.3%	1.8%
EMS-Chemie Holding AG	EMSN SW	NR	710.5	NA	17,394	28.6	25.1	8.3%	9.04	32.1%	3.2%
OC Oerlikon Corp AG	OERL SW	NR	6.65	NA	2,363	11.1	10.3	11.6%	1.46	13.2%	5.6%
Tosoh Corp	4042 JP	NR	1,711	NA	4,094	5.0	6.0	-0.1%	0.72	12.9%	4.7%
Nanofilm Technologies Int'l Ltd	NANO SP	ADD	2.33	3.07	1,100	21.8	17.9	16.1%	3.19	15.7%	1.1%
Simple average excluding Nanofilm						18.0	15.7	42.0%	3.6	22.5%	2.9%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS, BLOOMBERG
NOTE: FORECASTS FOR NOT RATED COMPANIES ARE BLOOMBERG CONSENSUS ESTIMATES
DATA AS AT 1 JUL 2022

Figure 11: Asian peers comparison

Company	Bloomberg Ticker	Recom.	Price (lcl curr)	Target Price (lcl curr)	Market Cap (US\$ m)	P/E (x) CY22F	P/E (x) CY23F	3-year EPS CAGR (%)	P/BV (x) CY22F	Recurring ROE (%) CY22F	Dividend Yield (%) CY22F
Singapore											
Nanofilm Technologies Int'l Ltd	NANO SP	ADD	2.33	3.07	1,100	21.8	17.9	16.1%	3.19	15.7%	1.1%
AAC Technologies	2018 HK	Reduce	18.06	13.54	2,782	15.4	11.1	11.9%	1.18	6.6%	1.0%
Avary Holding Shenzhen Co Ltd	002938 CH	NR	30.21	NA	10,467	17.7	15.1	18.5%	2.63	15.2%	1.7%
BOE Technology Group-A	000725 CH	Add	3.94	6.34	22,551	8.9	8.0	-10.2%	0.99	11.8%	4.5%
BYD Electronic International C	285 HK	NR	24.75	NA	7,106	21.2	14.2	22.5%	1.83	8.9%	0.5%
Cowell e Holdings Inc	1415 HK	Add	10.20	12.05	1,085	15.2	11.6	22.7%	2.62	19.7%	0.0%
GoerTek Inc	002241 CH	NR	33.60	NA	17,134	20.1	15.8	26.1%	3.48	17.9%	0.8%
Jabil Inc	JBL US	NR	51.21	NA	7,232	6.7	6.5	-0.9%	2.73	42.7%	0.6%
Largan Precision Co Ltd	3008 TT	NR	1,725	NA	7,672	12.4	12.9	0.7%	1.49	12.4%	3.9%
Lens Technology Co Ltd-A	300433 CH	Add	11.07	16.40	8,224	16.7	13.5	16.5%	1.21	7.6%	1.5%
LG Display	034220 KS	Hold	14,550	18,000	4,008	14.9	15.9	-24.7%	0.39	2.6%	4.5%
LG Innotek	011070 KS	Add	342,500	450,000	6,241	8.4	7.6	8.3%	1.94	25.7%	0.9%
OFILM Group Co Ltd	002456 CH	NR	6.71	NA	3,263	na	na	na	2.73	-8.6%	0.0%
Pegatron Corp	4938 TT	NR	57.00	NA	5,132	9.3	8.1	-0.3%	0.87	9.1%	7.8%
Q Technology	1478 HK	Add	5.40	8.47	815	10.0	6.3	6.6%	1.05	11.3%	0.0%
Samsung Electro-Mechanics	009150 KS	Add	130,500	180,000	7,504	9.0	8.2	9.0%	1.31	15.6%	1.6%
Samsung Electronics	005930 KS	Add	57,000	68,000	261,974	9.6	7.6	17.8%	1.18	12.9%	2.5%
Shenzhen Everwin Precision Tec	300115 CH	NR	10.31	NA	1,848	23.4	14.0	na	2.02	7.1%	0.8%
Shenzhen Goodix Tech-A	603160 CH	Reduce	61.93	55.15	4,241	38.8	33.6	3.5%	2.89	8.1%	0.7%
Sunny Optical Technology	2382 HK	Add	127.9	177.2	17,880	21.6	16.6	24.6%	4.80	25.0%	0.9%
Tianma Microelectronics-A	000050 CH	Add	9.97	15.72	3,660	14.7	13.6	0.5%	0.67	4.7%	0.8%
Tongda Group Holdings Ltd	698 HK	Hold	0.15	0.15	187	6.1	4.3	16.0%	0.18	3.0%	0.0%
Universal Scientific Industrial	601231 CH	Add	14.36	18.32	4,741	14.0	11.8	19.1%	1.54	13.6%	4.3%
Will Semiconductor Ltd-A	603501 CH	Add	173.0	221.0	22,665	30.7	25.0	15.9%	7.16	27.0%	0.3%
Zhen Ding Technology Holding L	4958 TT	NR	103.0	NA	3,247	8.8	8.1	12.9%	1.08	11.8%	5.4%
Simple average						15.4	12.6	9.9%	2.00	13.0%	1.9%

SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS, BLOOMBERG
NOTE: FORECASTS FOR NOT RATED COMPANIES ARE BLOOMBERG CONSENSUS ESTIMATES
DATA AS AT 1 JUL 2022

Figure 12: Nanofilm 12-mth forward rolling P/E (x)


SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

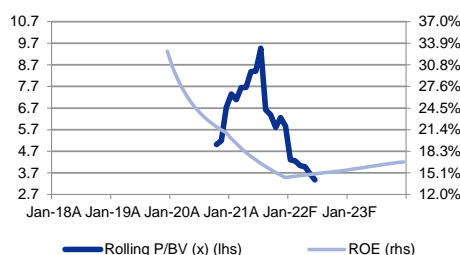
Figure 13: Singapore tech sector valuation

Company	Bloomberg Ticker	Recom.	Price (1cl curr)	Target Price (1cl curr)	Market Cap (US\$ m)	P/E (x)		3-year EPS CAGR (%)	P/BV (x)		Recurring ROE (%)	Dividend Yield (%)
						CY22F	CY23F		CY22F	CY23F		
Aztech Global Ltd	AZTECH SP	Add	0.82	1.59	452	7.0	6.1	10.7%	1.86	1.62	28.7%	7.2%
Grand Venture Technology Ltd	GVTL SP	Add	0.73	1.29	177	10.9	7.4	22.4%	2.00	1.64	20.0%	1.8%
ISDN Holdings Ltd	ISDN SP	Add	0.49	0.70	153	8.1	7.0	7.7%	0.98	0.89	12.9%	3.1%
AEM Holdings Ltd	AEM SP	Add	4.14	6.85	918	10.8	9.4	11.9%	2.61	2.16	26.9%	2.3%
Frencken Group Ltd	FRKN SP	Add	1.11	1.77	340	8.0	7.0	6.7%	1.13	1.01	15.0%	3.7%
Nanofilm Technologies Int'l Ltd	NANO SP	Add	2.33	3.07	1,100	21.8	17.9	14.7%	3.19	2.81	15.7%	1.1%
UMS Holdings Ltd	UMSH SP	Add	1.11	1.63	531	10.2	9.9	13.3%	2.34	2.07	24.9%	4.5%
Venture Corporation	VMS SP	Add	16.63	23.32	3,473	13.4	12.4	9.0%	1.69	1.59	12.9%	4.5%
Vicplas International Ltd	VPS SP	Add	0.20	0.28	73	8.9	8.0	na	1.22	1.09	14.5%	2.8%
Simple average						11.0	9.5	12.0%	1.89	1.65	19.1%	3.5%
Simple average excluding Nanofilm						9.7	8.4	12.0%	1.73	1.51	19.5%	3.7%

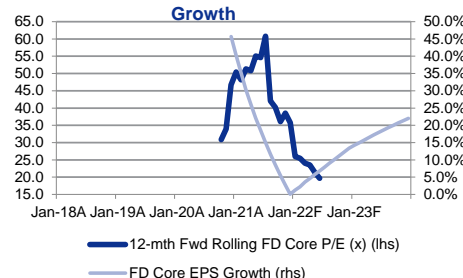
SOURCES: CGS-CIMB RESEARCH ESTIMATES, COMPANY REPORTS, BLOOMBERG
DATA AS AT 1 JUL 2022

BY THE NUMBERS

P/BV vs ROE



12-mth Fwd FD Core P/E vs FD Core EPS Growth



Profit & Loss

(\$m)	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Total Net Revenues	222.5	255.2	288.7	338.3	382.9
Gross Profit	124.0	130.7	178.5	210.5	237.9
Operating EBITDA	90.6	95.1	110.6	133.2	150.3
Depreciation And Amortisation	(19.3)	(25.5)	(29.8)	(34.6)	(38.8)
Operating EBIT	71.3	69.6	80.8	98.6	111.5
Financial Income/(Expense)	(1.0)	0.3	0.3	0.3	0.3
Pretax Income/(Loss) from Assoc.	0.0	0.0	0.0	0.0	0.0
Non-Operating Income/(Expense)	0.0	0.0	0.0	0.0	0.0
Profit Before Tax (pre-EI)	70.3	69.9	81.1	98.9	111.8
Exceptional Items					
Pre-tax Profit	70.3	69.9	81.1	98.9	111.8
Taxation	(12.2)	(7.3)	(10.1)	(12.4)	(14.0)
Exceptional Income - post-tax					
Profit After Tax	58.1	62.5	70.9	86.5	97.8
Minority Interests	(0.4)	(0.3)	(0.4)	(0.5)	(0.5)
Preferred Dividends					
FX Gain/(Loss) - post tax					
Other Adjustments - post-tax					
Net Profit	57.6	62.2	70.5	86.0	97.3
Recurring Net Profit	57.6	62.2	70.5	86.0	97.3
Fully Diluted Recurring Net Profit	57.6	62.2	70.5	86.0	97.3

Cash Flow

(\$m)	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
EBITDA	90.58	95.12	110.60	133.19	150.31
Cash Flow from Inv. & Assoc.					
Change In Working Capital	(26.13)	(16.00)	(12.76)	(12.87)	(11.78)
(Incr)/Decr in Total Provisions					
Other Non-Cash (Income)/Expense	6.66	1.56			
Other Operating Cashflow					
Net Interest (Paid)/Received	(1.88)	0.63	0.30	0.30	0.30
Tax Paid	(10.21)	(8.11)	(10.13)	(12.36)	(13.97)
Cashflow From Operations	59.02	73.20	88.00	108.26	124.86
Capex	(80.20)	(115.31)	(60.00)	(72.00)	(63.00)
Disposals Of FAs/subsidiaries					
Acq. Of Subsidiaries/investments					
Other Investing Cashflow	0.18	(4.50)	0.00	0.00	0.00
Cash Flow From Investing	(80.02)	(119.81)	(60.00)	(72.00)	(63.00)
Debt Raised/(repaid)	35.33	(12.53)	0.00	0.00	0.00
Proceeds From Issue Of Shares	0.00	0.00	0.00	0.00	0.00
Shares Repurchased			0.00	0.00	0.00
Dividends Paid	(9.63)	(6.59)	(17.63)	(21.51)	(24.33)
Preferred Dividends					
Other Financing Cashflow	(4.89)	(2.24)	0.00	0.00	0.00
Cash Flow From Financing	20.81	(21.35)	(17.63)	(21.51)	(24.33)
Total Cash Generated	(0.19)	(67.96)	10.37	14.75	37.53
Free Cashflow To Equity	14.33	(59.14)	28.00	36.26	61.86
Free Cashflow To Firm	(18.60)	(46.26)	28.70	36.96	62.56

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

BY THE NUMBERS... cont'd

Balance Sheet

(\$m)	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Total Cash And Equivalents	227.4	176.6	187.0	201.7	239.3
Total Debtors	95.7	106.8	126.6	148.3	167.8
Inventories	15.8	17.4	21.1	24.5	27.7
Total Other Current Assets	17.7	27.9	27.9	27.9	27.9
Total Current Assets	356.5	328.7	362.5	402.3	462.7
Fixed Assets	174.5	290.2	321.8	360.7	386.3
Total Investments	0.0	0.0	0.0	0.0	0.0
Intangible Assets	3.8	9.9	8.7	7.5	6.3
Total Other Non-Current Assets	13.6	14.8	15.9	15.6	15.3
Total Non-current Assets	191.9	314.8	346.4	383.8	407.9
Short-term Debt			2.1	2.1	2.1
Current Portion of Long-Term Debt	21.4	2.1			
Total Creditors	47.1	60.5	71.2	83.4	94.4
Other Current Liabilities	19.1	11.5	11.5	11.5	11.5
Total Current Liabilities	87.7	74.1	84.8	97.0	108.0
Total Long-term Debt	18.3	79.3	26.2	26.2	26.2
Hybrid Debt - Debt Component					
Total Other Non-Current Liabilities	1.4	15.3	69.7	69.7	69.7
Total Non-current Liabilities	19.8	94.6	95.9	95.9	95.9
Total Provisions	1.0	1.3	0.0	0.0	0.0
Total Liabilities	108.5	169.9	180.6	192.8	203.8
Shareholders' Equity	430.8	429.6	482.5	547.0	620.0
Minority Interests	9.6	45.4	45.8	46.2	46.7
Total Equity	440.4	475.0	528.3	593.3	666.7

Key Ratios

	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Revenue Growth	52.8%	13.0%	17.0%	17.2%	13.2%
Operating EBITDA Growth	63.7%	5.0%	16.3%	20.4%	12.9%
Operating EBITDA Margin	41.5%	38.6%	38.3%	39.4%	39.3%
Net Cash Per Share (\$)	0.28	0.14	0.24	0.26	0.32
BVPS (\$)	0.65	0.65	0.73	0.83	0.94
Gross Interest Cover	45.3	98.8	115.4	140.8	159.2
Effective Tax Rate	17.4%	10.5%	12.5%	12.5%	12.5%
Net Dividend Payout Ratio	NA	21.2%	25.0%	25.0%	25.0%
Accounts Receivables Days	129.0	149.8	147.5	148.3	151.1
Inventory Days	56.68	48.58	63.70	65.10	65.85
Accounts Payables Days	156.3	157.7	218.1	220.9	224.5
ROIC (%)	45.4%	27.3%	20.5%	22.4%	22.8%
ROCE (%)	21.7%	13.6%	14.7%	16.9%	17.1%
Return On Average Assets	15.1%	10.4%	10.4%	11.5%	11.8%

Key Drivers

	Dec-20A	Dec-21A	Dec-22F	Dec-23F	Dec-24F
Advanced Materials (% yoy)	66.5%	6.5%	27.0%	22.7%	17.5%
Industrial Equipment (% yoy)	-10.2%	81.3%	5.0%	4.0%	3.0%
Nanofabrication (% yoy)	90.3%	-30.7%	12.0%	12.0%	12.0%

SOURCES: CGS-CIMB RESEARCH, COMPANY REPORTS

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Description:	Excellent	Very Good	Good	N/A	N/A

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632 companies under coverage for quarter ended on 31 March 2022		
	Rating Distribution (%)	Investment Banking clients (%)
Add	70.3%	0.8%
Hold	22.0%	0.0%
Reduce	7.8%	0.2%

Spitzer Chart for stock being researched (2 year data)

Nanofilm Technologies Int'l Ltd (NANO SP)



Corporate Governance Report of Thai Listed Companies (CGR). CG Rating by the Thai Institute of Directors Association (Thai IOD) in 2021, Anti-Corruption 2021

ADVANC – Excellent, Certified, **AMATA** – Excellent, Certified, **ANAN** – Excellent, n/a, **AOT** – Excellent, n/a, **AP** – Excellent, Certified, **ASP** – Excellent, n/a, **AWC** – Excellent, Declared, **AU** – Good, n/a, **BAM** – Very Good, Certified, **BAY** – Excellent, Certified, **BBL** – Excellent, Certified, **BCH** – Very Good, Certified, **BCP** – Excellent, Certified, **BCPG** – Excellent, Certified, **BDMS** – Excellent, n/a, **BEAUTY** – Good, n/a, **BEM** – Excellent, n/a, **BH** – Good, n/a, **BJC** – Very Good, n/a, **BLA** – Very Good, Certified, **BTS** – Excellent, Certified, **CBG** – Very Good, n/a, **CCET** – n/a, n/a, **CENTEL** – Excellent, Certified, **CHAYO** – Very Good, n/a, **CHG** – Very Good, n/a, **CK** – Excellent, n/a, **COM7** – Excellent, Certified, **CPALL** – Excellent, Certified, **CPF** – Excellent, Certified, **CPN** – Excellent, Certified, **CPNREIT** – n/a, n/a, **CRC** – Excellent, Declared, **DELTA** – Excellent, Certified, **DDD** – Excellent, n/a, **DIF** – n/a, n/a, **DOHOME** – Very Good, Declared, **DREIT** – n/a, n/a, **DTAC** – Excellent, Certified, **ECL** – Excellent, Certified, **EGCO** – Excellent, Certified, **EPG** – Excellent, Certified, **ERW** – Very Good, Certified, **GFPT** – Excellent, Certified, **GGC** – Excellent, Certified, **GLOBAL** – Excellent, n/a, **HANA** – Excellent, Certified, **HMPRO** – Excellent, Certified, **HUMAN** – Good, n/a, **ICHI** – Excellent, Certified, **III** – Excellent, Declared, **INTUCH** – Excellent, Certified, **IRPC** – Excellent, Certified, **ITD** – Very Good, n/a, **IVL** – Excellent, Certified, **JASIF** – n/a, n/a, **JKN** – n/a, Certified, **JMT** – Very Good, n/a, **KBANK** – Excellent, Certified, **KCE** – Excellent, Certified, **KEX** – Very Good, Declared, **KKP** – Excellent, Certified, **KSL** – Excellent, Certified, **KTB** – Excellent, Certified, **KTC** – Excellent, Certified, **LH** – Excellent, n/a, **LPN** – Excellent, Certified, **M** – Very Good, Certified, **MAKRO** – Excellent, Certified, **MC** – Excellent, Certified, **MEGA** – Very Good, n/a, **MINT** – Excellent, Certified, **MTC** – Excellent, Certified, **NETBAY** – Very Good, n/a, **NRF** – Very Good, Declared, **OR** – Excellent, n/a, **ORI** – Excellent, Certified, **OSP** – Excellent, n/a, **PLANB** – Excellent, Certified, **PRINC** – Very Good, Certified, **PR9** – Excellent, Declared, **PSH** – Excellent, Certified, **PTT** – Excellent, Certified, **PTTEP** – Excellent, n/a, **PTTGC** – Excellent, Certified, **QH** – Excellent, Certified, **RAM** – n/a, n/a, **RBF** – Very Good, n/a, **RS** – Excellent, Declared, **RSP** – Good, n/a, **S** – Excellent, n/a, **SAK** – Very Good, Declared, **SAPPE** – Very Good, Certified, **SAWAD** – Very Good, n/a, **SCB** – Excellent, Certified, **SCC** – Excellent, Certified, **SCGP** – Excellent, Declared, **SECURE** – n/a, n/a, **SHR** – Excellent, n/a, **SIRI** – Excellent, Certified, **SPA** – Very Good, n/a, **SPALI** – Excellent, Certified, **SPRC** – Excellent, Certified, **SSP** – Good, Certified, **STEC** – Excellent, n/a, **SVI** – Excellent, Certified, **SYNEX** – Very Good, Certified, **TCAP** – Excellent, Certified, **THANI** – Excellent, Certified, **TIDLOR** – n/a, Certified, **TISCO** – Excellent, Certified, **TKN** – Very Good, n/a, **TOP** – Excellent, Certified, **TRUE** – Excellent, Certified, **TTB** – Excellent, Certified, **TU** – Excellent, Certified, **TVO** – Excellent, Certified, **VGI** – Excellent, Certified, **WHA** – Excellent, Certified, **WHART** – n/a, n/a, **WICE** – Excellent, Certified, **WORK** – Good, n/a.

- CG Score 2021 from Thai Institute of Directors Association (IOD)

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Add	The stock's total return is expected to exceed 10% over the next 12 months.
Hold	The stock's total return is expected to be between 0% and positive 10% over the next 12 months.
Reduce	The stock's total return is expected to fall below 0% or more over the next 12 months.
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Overweight	An Overweight rating means stocks in the sector have, on a market cap-weighted basis, a positive absolute recommendation.
Neutral	A Neutral rating means stocks in the sector have, on a market cap-weighted basis, a neutral absolute recommendation.
Underweight	An Underweight rating means stocks in the sector have, on a market cap-weighted basis, a negative absolute recommendation.
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Neutral	A Neutral rating means investors should be positioned with a neutral weight in this country relative to benchmark.
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