Investor Presentation

SOLAR APPLIED MATERIALS TECH. CORP.

(1785 TT/TW)

March 2023

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Led by a strong team of experienced professionals

Chairman/President

C.F. Huang

黃啟峰

30 of years of industry experience

- Vice President, Operations & Engineering, **Continental Teves Taiwan**

VP

Thin-film & Electronic Materials BU

Gary Chung

鍾怡歡

25 of years of industry experience

- General Manager, **Life Fusion Inc.**
- Sales Manager, **Applied Materials Taiwan**

AVP

Functional Ceramics & Compound BU

Seward Hu

胡書華

20 of years of industry experience

- Assistant Vice President, **Topview Optronics Corp.**

AVP

Precious metals & Green Management BU

Vincent Huang

黃明山

25 of years of industry experience

- Manager, **ChipMOS Technologies Inc.**
- Deputy Director, Precious Metal BU, **SolarTech**

VP

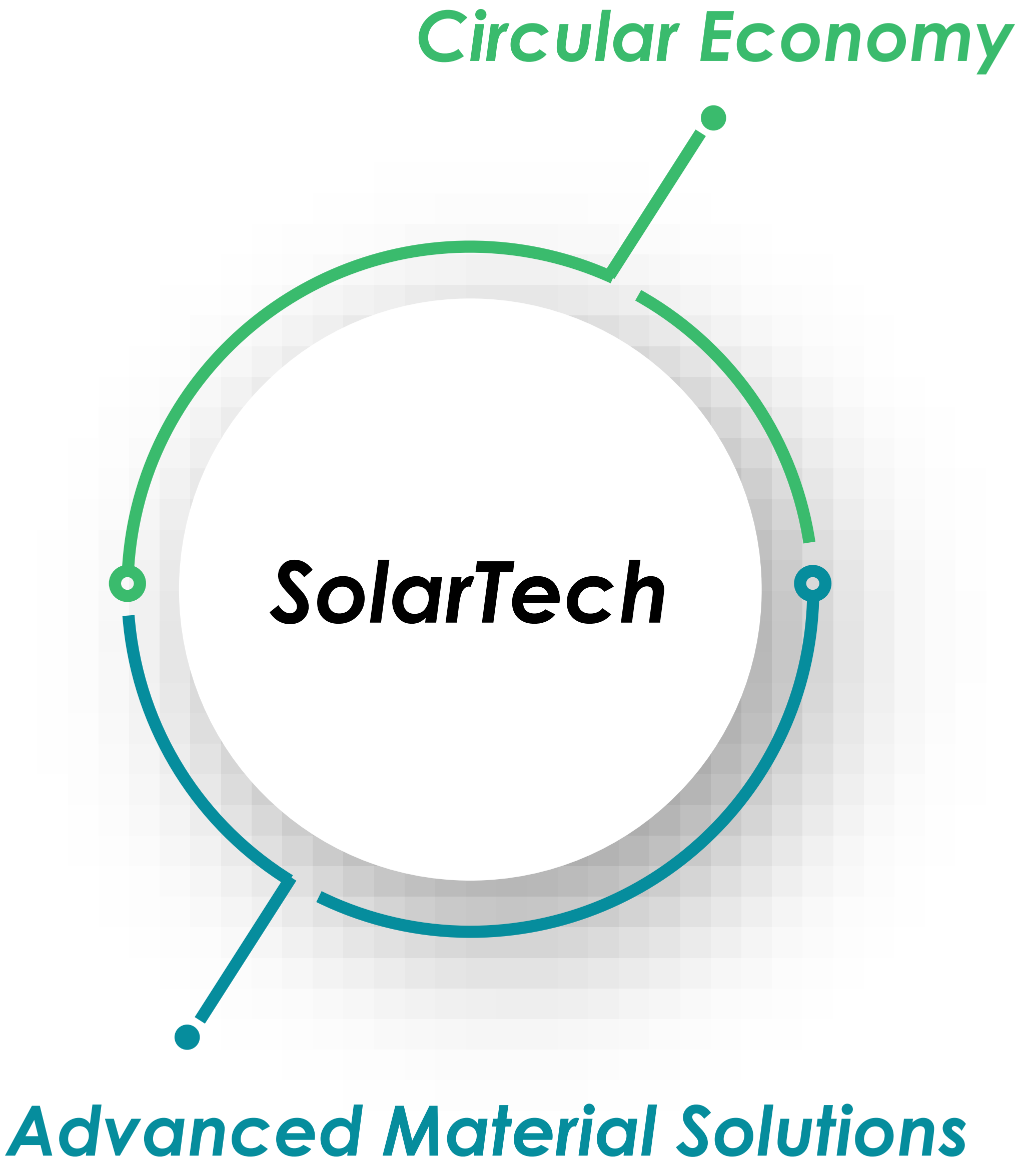
Intelligence Operations Center

Ben Hong

洪本展

30 of years of industry experience

- Vice President, **Quanta Computer Inc.**
- Executive Vice President, **Inventec Multimedia & Telecom Corporation**



We are

A Leading Circular Materials Technology Company

with an extensive expertise in the fields of material science, chemistry and metallurgy

We are **UNIQUE**

because we provide truly innovative material solutions to solve our customers' most complex technical challenges

in the most **SUSTAINBLE** way

Company milestone

Alloy design and target manufacturing for thin film applications

PGC / PSC

Taiwan No.1

Ag Au

Gold / Silver **Chemicals** and Refining

1978

ODS (Optical Data Storage) Sputtering Target

World Leading

Sputtering target manufacturing

1998

MDS (Magnetic Data Storage) Sputtering Target

World Leading

Pt Ru Pd

Complex alloy design and manufacturing

2004

OE (Optoelectronics) Sputtering Target (FPD / PV / LED)

In Ga

Ceramic target manufacturing

TCO (Transparent Conductive Oxide) materials design

2008

SEMI

Ta

Ultra high purity semiconductor materials

2016

SEMI

Cu

1st in SEMI industry **Copper Circular Economy**

2018

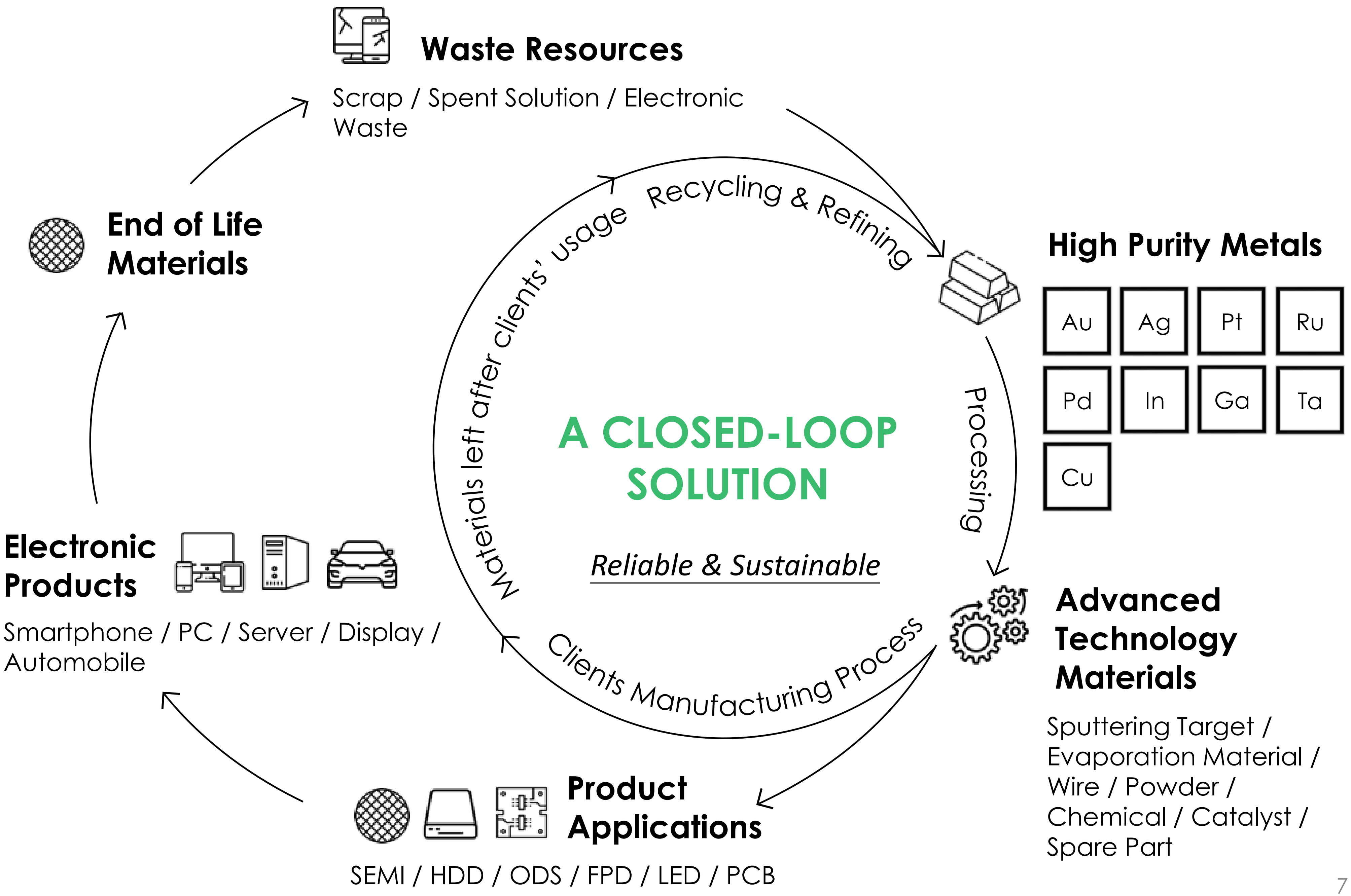
Digital Transformation

Drive Digital Transformation to Expand Margin

2021

Recycling & Refining of precious / rare metals

Enabling circular economy



SOLAR at a glance

1978
Founded

2005
Listed (1785 TT)

Tainan, Taiwan
Headquarters

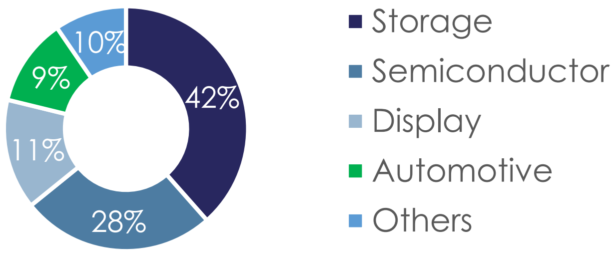
1,521
Employees (2022)

NT$25.8 Bn
Total Sales in 2022
-17.7% YoY

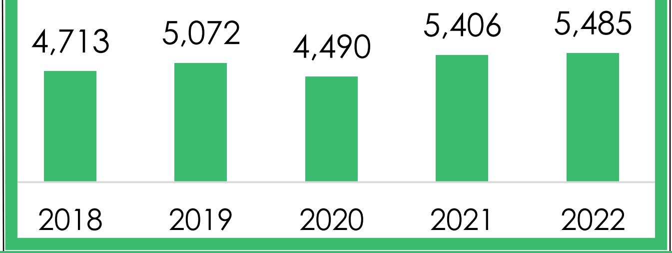
NT$22.1 Bn
US$725 Mn
Market Cap as of Feb, 2023

NT$5.5 Bn
Value Added Sales in 2022
+1.5% YoY

Value Added Sales
Breakdown by Applications (FY 2022)



Value Added Sales (NT$mn)



5 Factories
Located in Taiwan and Mainland China

SolarTech's Industry Position

World No.1
Hard Disk Drive
Data Storage Sputtering Target

Taiwan No.1
Semiconductor
Precious Metal Sputtering Target

Taiwan No.1
Precious Metals Recycling
Precious Metal recycling and high purity refining

Strong track record of growth generation

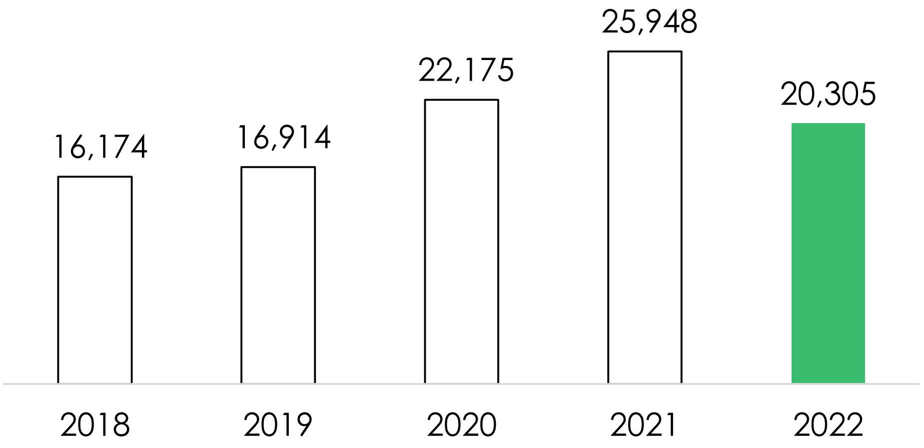
Precious Metals Sales

Precious metals are sold mainly as part of raw materials in products. In addition to the growth of business volume, revenue is also subject to changes in precious metal price trends (depending on if the materials are on consigned basis or not).

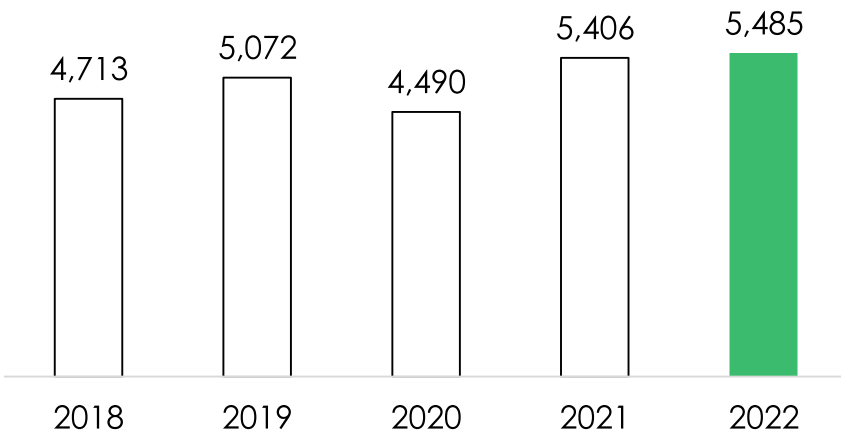
Value Added Sales (VAS)

Value-added sales (VAS) reflect the true value of the products that we deliver to our customers, regardless of the precious metal prices.

Precious Metals Sales (NT$mn)

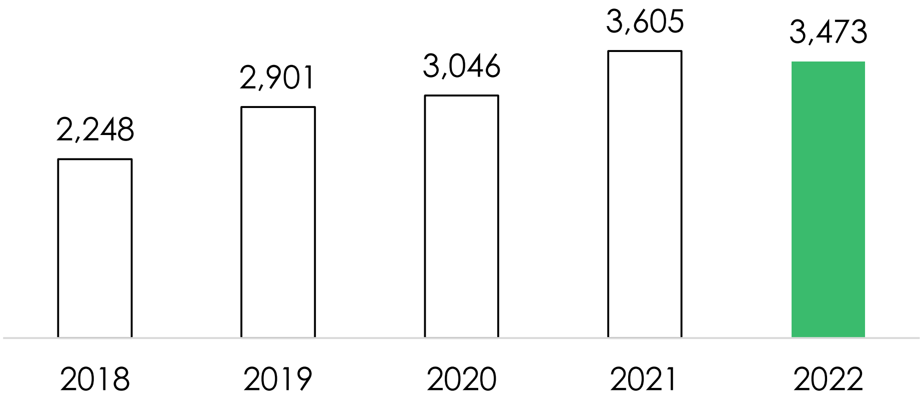


Value Added Sales (NT$mn)



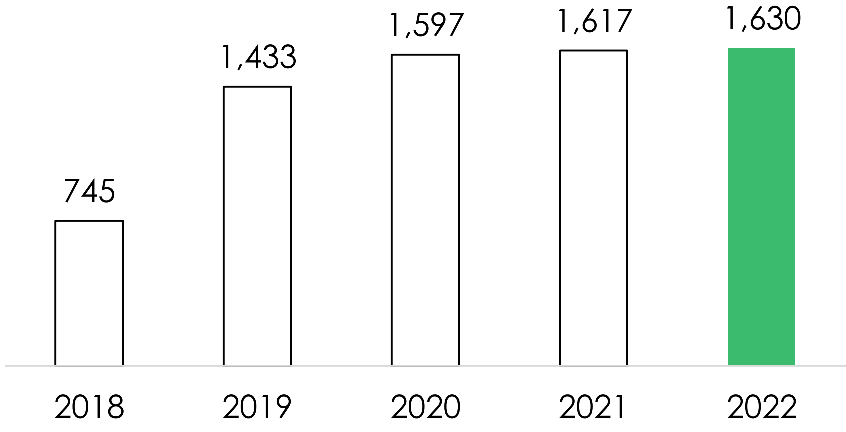
Gross Profit (NT$mn)

CAGR: 11%



Operating Profit (NT$mn)

CAGR: 22%



Why invest in SolarTech ?

- We are a global leader in advanced materials solutions. We are the world's largest manufacturer of sputtering targets for hard-disk drives (HDD), as well as Taiwan's largest manufacturer of sputtering targets for semiconductors. Our unique foundation as a **circular** materials company and our ability to provide our customers with **mission-critical solutions** have allowed us to emerge as a preferred partner throughout our customers' technology roadmap.

- We are well-positioned to benefit from several megatrends in the industry, including

  1) **Increasing complexity in electronic devices requires more sophisticated chips and solutions, leading to a rise in demand for advanced materials;**
  2) **The growing importance of local supply chains and substitutes; and**
  3) **Companies' shift towards a circular economy.**

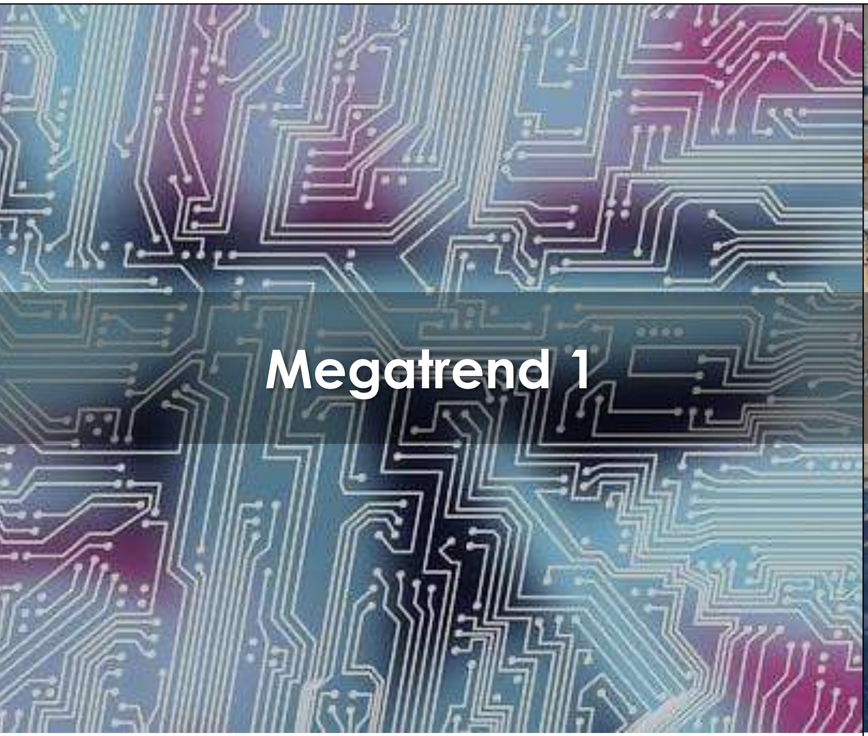
  These trends are expected to enhance the competitiveness of our company and will provide a significant growth opportunity for our revenues and earnings.

- In light of these factors, we aim for a **50% CAGR** in our front-end semiconductor materials value-added sales (VAS) in the next five years, which should result in **double-digit growth** in value-added sales and earnings to support further value-enhancing investments and sustained dividend payout to our shareholders.

PART 2

Trends & Technologies

Key megatrends that propel our growth



Increasing complexity of electronic devices requiring new solutions and more varieties of alloy materials

More Volumes

The growing importance of local supply chains and substitutes

More Shares

Companies’ shift towards a circular economy

More Needs

Our Strategy

Scale Up

- Capacity investments synchronized to customers' expansion plans.
- Ability to tackle industry challenges & supply reliability.
- Continue localizing footprint close to customers in Taiwan and elsewhere in the world.

Optimize our Portfolio

- Commitment to relevant portfolio breadth in high-growth areas.
- Targeted expansion of portfolio into other adjacencies.

Level up in Tech

- Further sharpen focus on profitable innovation, addressing key inflection points.
- Address sustainable innovation and continue to invest in R&D.

Achieve Operational Excellence

- Digital transformation to deliver maximum value.
- Accelerating our strategy to deliver breakthrough operations performance

Responsible Business

- Closed-loop metal recycling solution support climate change mitigation.
- Committed to continued advancing ESG initiatives.

Megatrend 1

Increasing complexity of electronic devices requiring new solutions and more varieties of alloy materials

- The era of the Data-Centric Environment requires a wide range, and a large quantity of chips, storage, and display solutions to deliver the myriad functions and applications being designed.
- With these new drivers, there comes an expectation for higher-quality, higher-performing materials at a faster pace.
- As application nodes advance, increased purity and alloy varieties are essential to customers' requirements.

Industries driven by the era of the data-centric environment

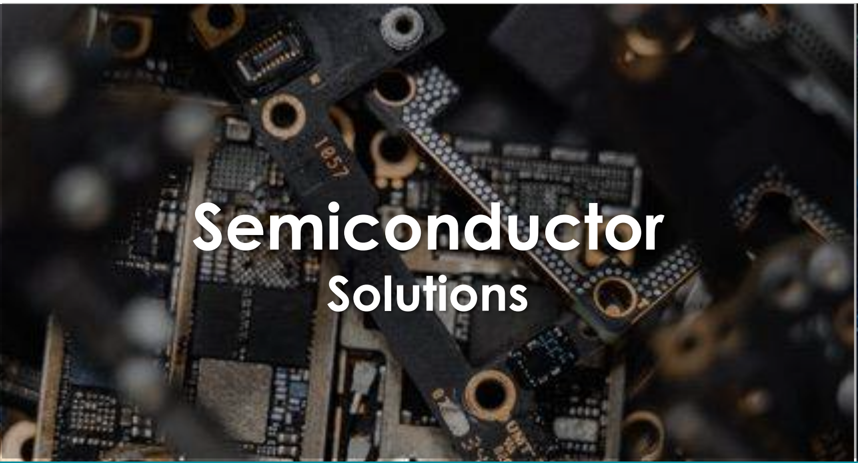
PC & Internet

Mobile

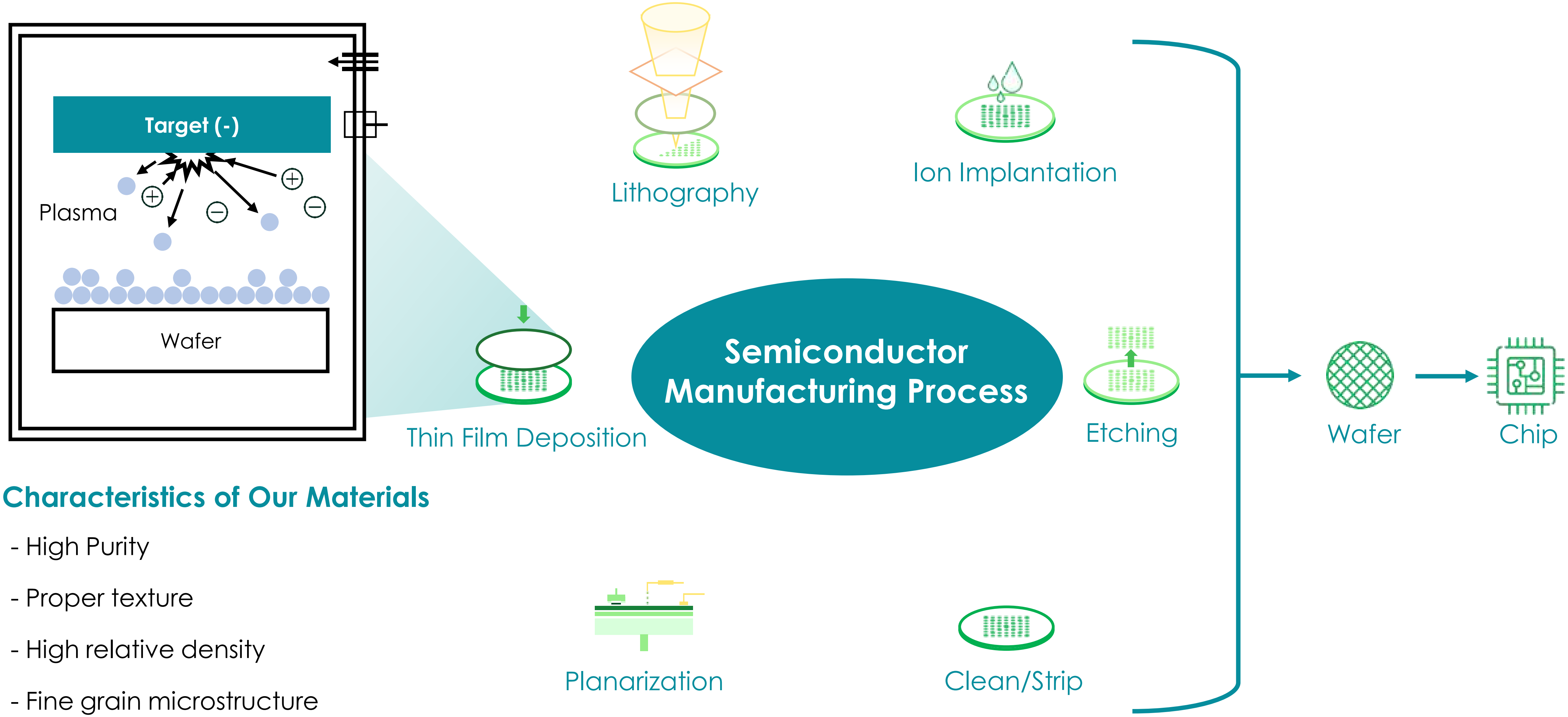
Data Centric & AI

Big data
Artificial Intelligence
Autonomous Vehicles
Virtual/ Augmented Reality

2000	2010	2025
One PC per household	One mobile device per person	100's of chips per household? 1000's of chips per factory? How many chips per city?



Our products are used in thin film deposition processes



Characteristics of Our Materials

- High Purity
- Proper texture
- High relative density
- Fine grain microstructure
- Uniform microstructure

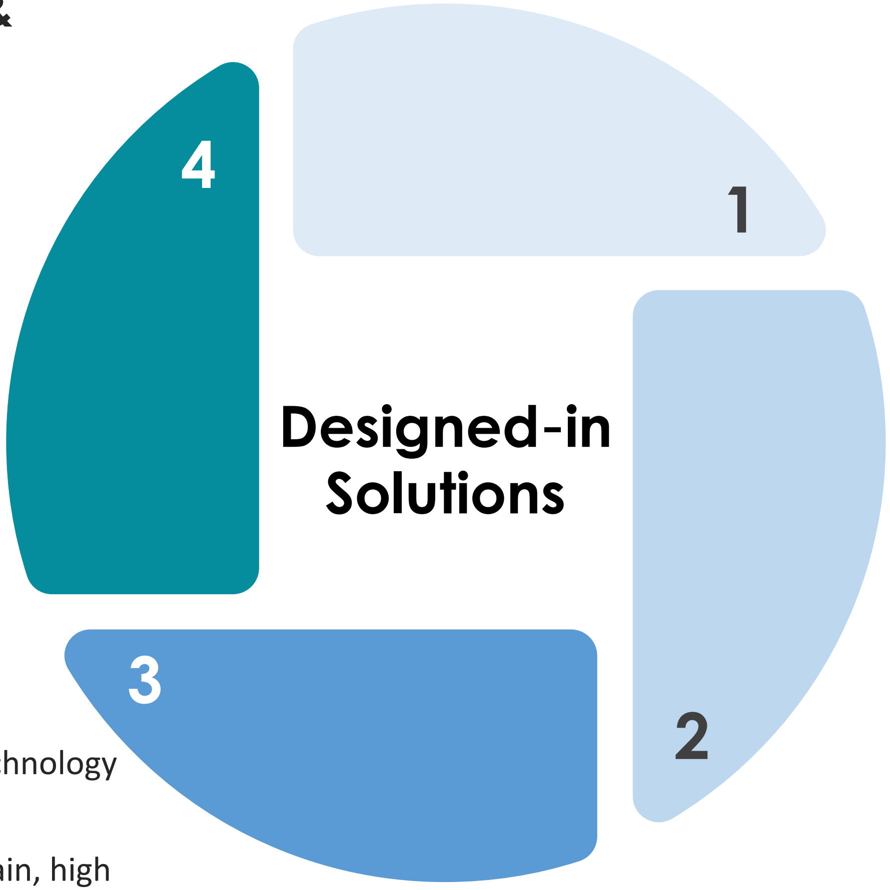
Establish partnership with customers to develop "designed-in" solutions

4 - We provide customers the best solution to solve function & manufacturing bottleneck

- High Performance Products
- Rapid Engineering Response (Time to Market)
- Value-Added Solution (Green Circular Economy)

3 - To develop advanced materials with high-end manufacturing technology

- High purity material refining technology
- Advanced smelting, sintering and molding technology (low gas content, high density)
- Advanced texture control technology (fine grain, high uniformity, specific texture)
- High-end diffusion bonding technology
- High-end sputtering target cleaning technology



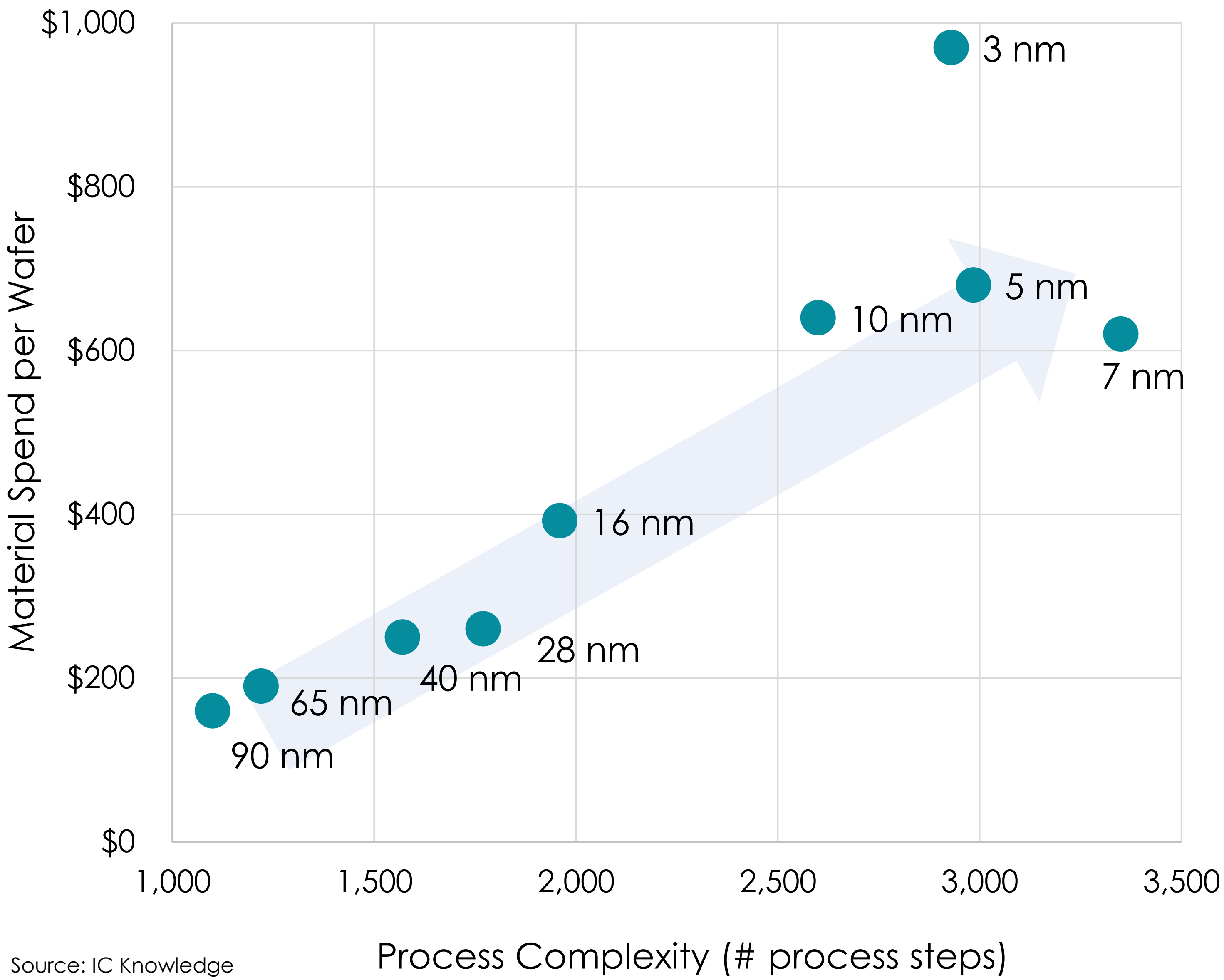
1 - We work with our customers to understand their current and future challenges

Customer Technology & Product Roadmaps

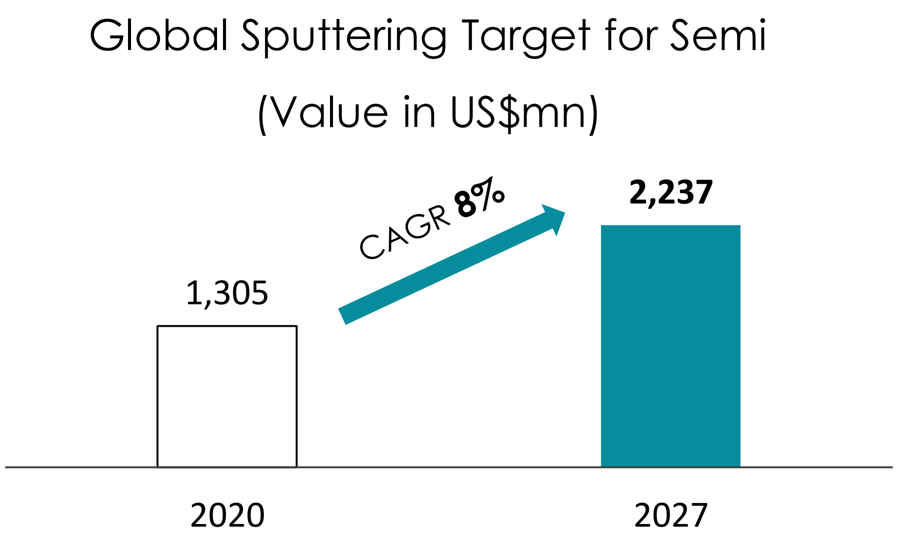
2 - Applying our core competencies and expertise

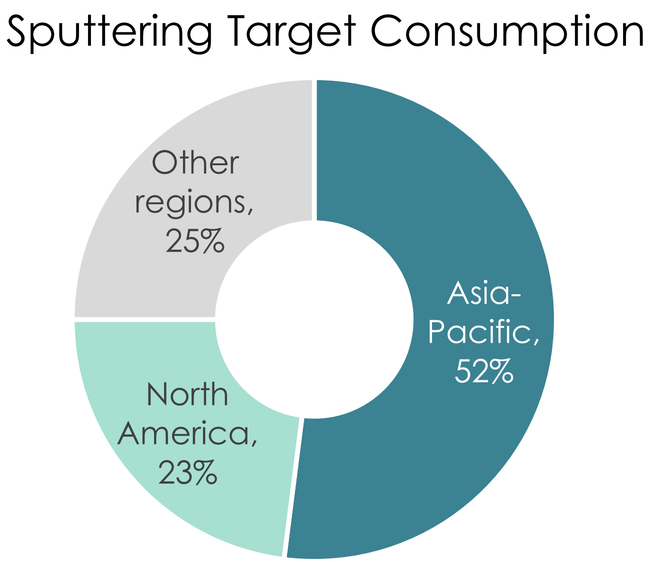
- Materials Science
- Alloy Design > 3000 alloys
- Applications and Process Know-How

More complex chip drive more materials demand



Source: IC Knowledge





Provide Best-fit Solutions to new HAMR recording technology

- **Rising demand for greater storage capacity**
  - Data growth fuel the demand for larger HDD Capacity.
  - HDD leading company actively moves toward new HAMR recording technology since PMR technology is reaching its limit.

- **Seagate announce to launch the industry's first 30+TB HDD that uses HAMR technology in 2023Q3**

2019 2020 2021 2022 2023 2024 2025 2026

PMR **MACH.2**: 16TB — 18TB — 20TB - - - - - - - -

HAMR **MACH.2**: - - - 14 - 20+TB - - 30+TB - 40+TB - 50+TB

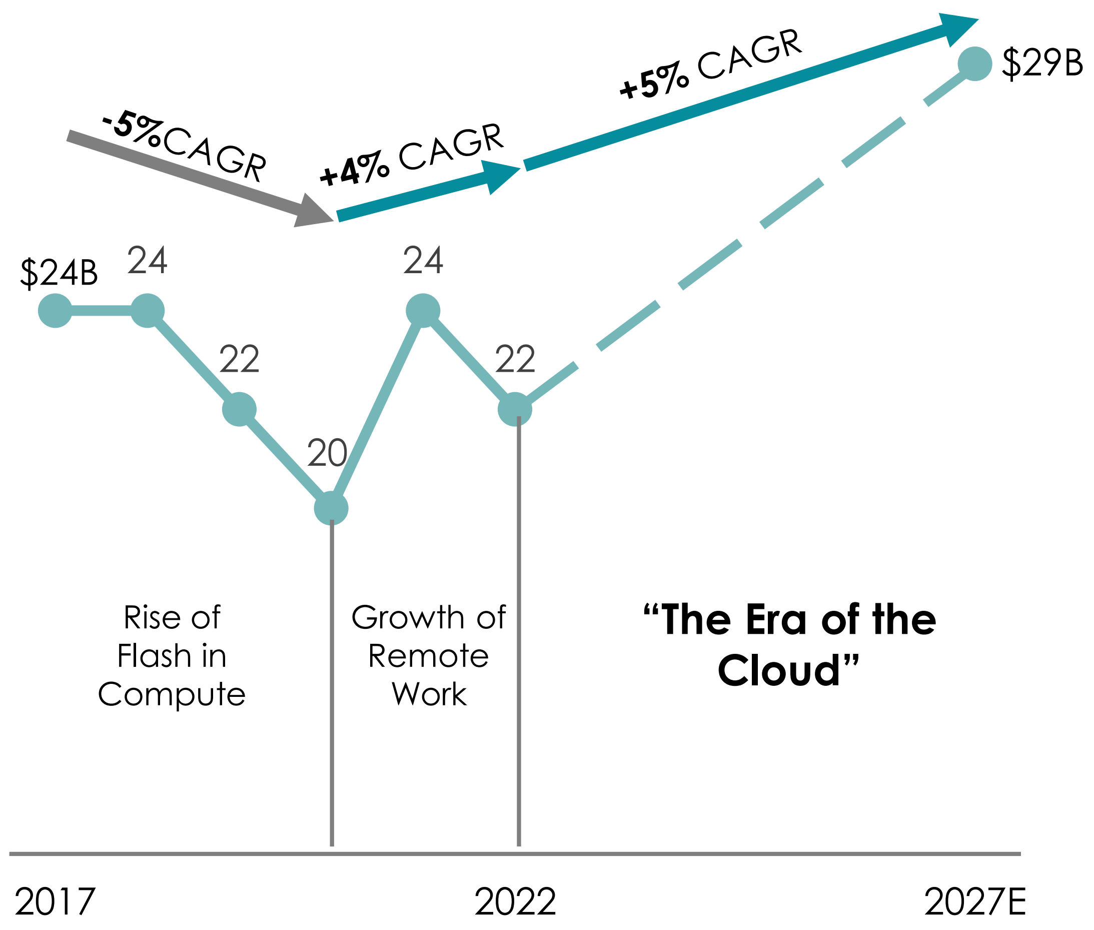
Source: Seagate 2021 Analyst Day, 2021/2

- **Western Digital will adopt HAMR technology for large capacity HDD in the future**

Data explosion drive higher HDD capacity demand

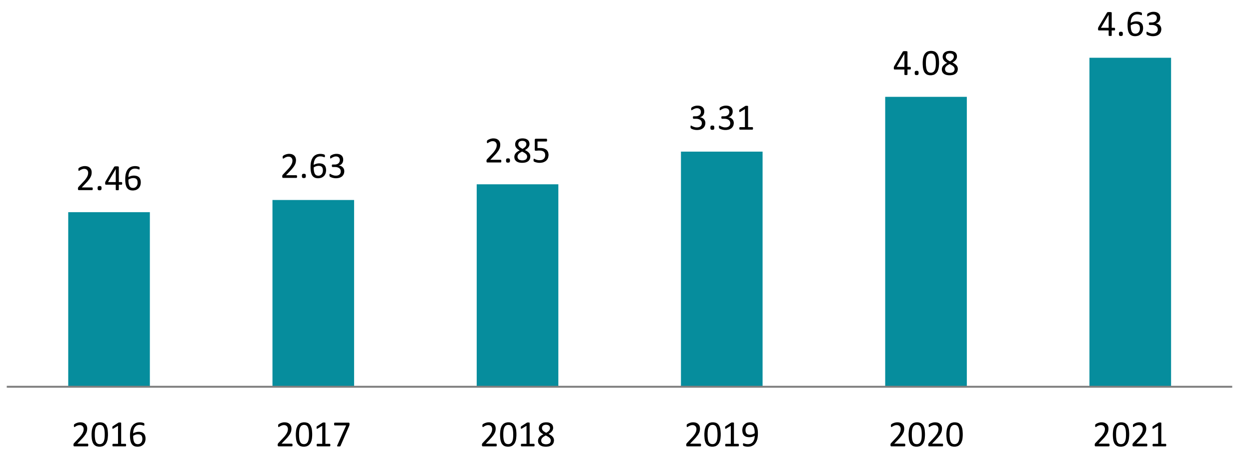
HDD Revenue TAM (US$bn)

2017-2027E

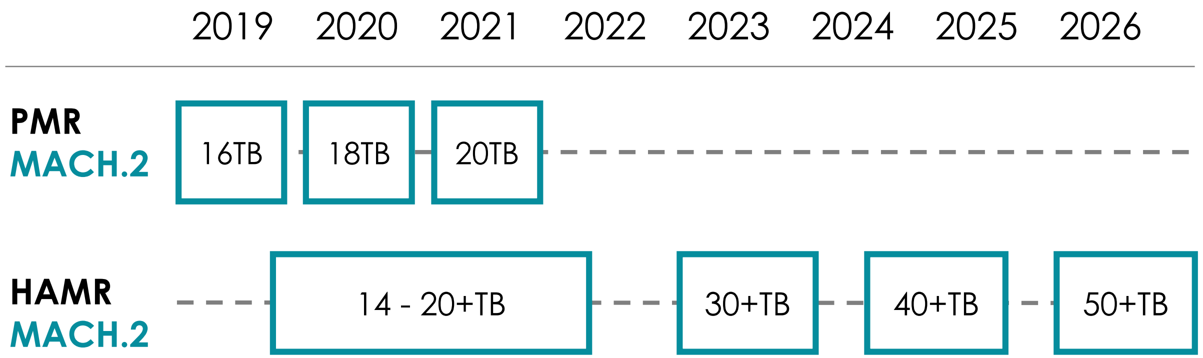


Source: WDD Investor Day, 2022/5

Average HDD platters in each drive



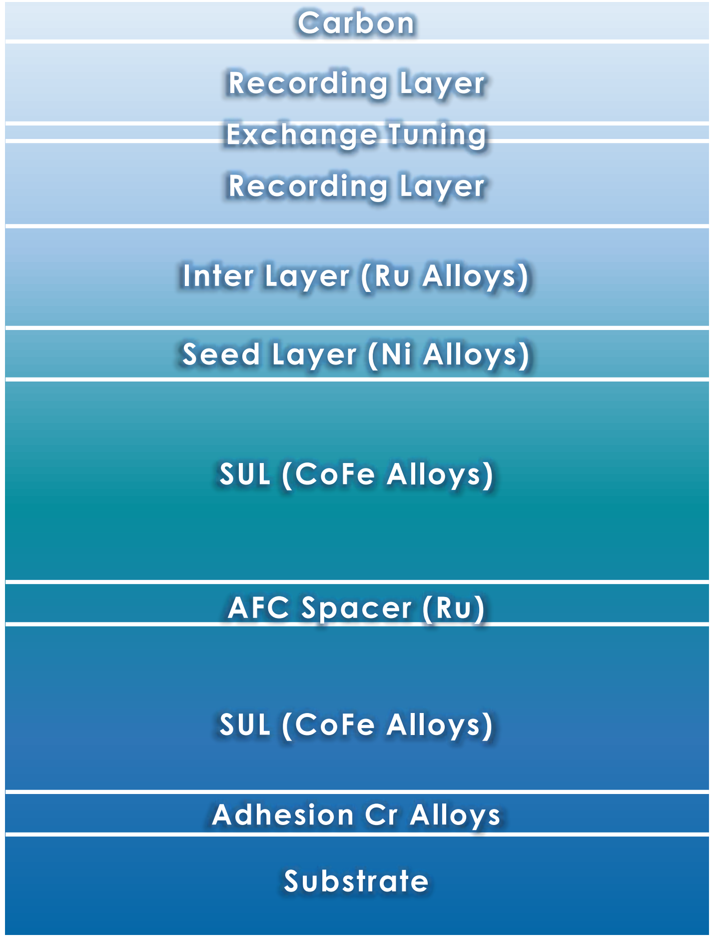
Seagate Product Roadmap



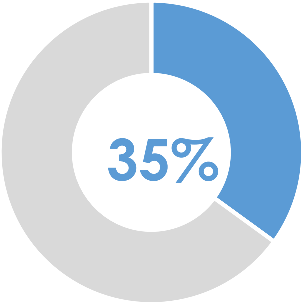
Source: Seagate 2021 Analyst Day, 2021/2

Solar is leading in HDD target supply

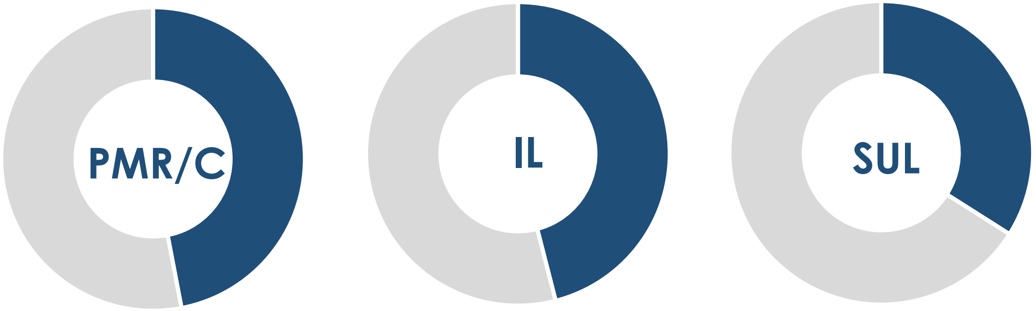
Layers layout of HDD



Solar is the **only full spectrum supplier**.
All global HDD companies are our customers with one-third market share.



Main supplier for different layers



Commitment to relevant portfolio breadth in high growth areas

Strong portfolio of metallurgies technologies empowering today's application

Solutions empowering customers to make smaller, faster, more energy efficient, and more sustainable devices in various applications across the entire data sphere

And enabling tomorrow's leading-edge technologies

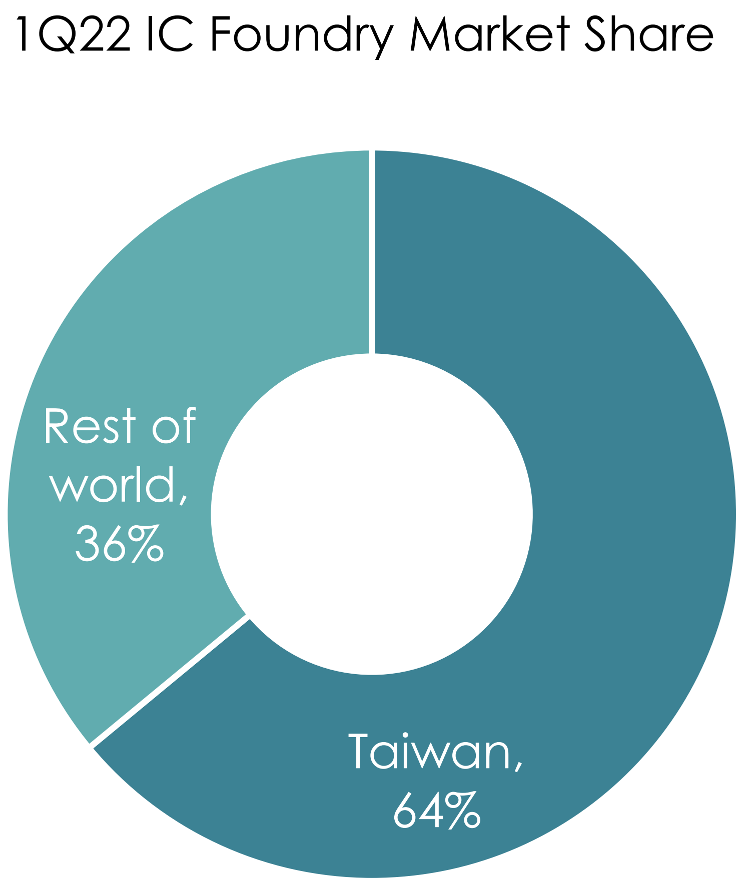
High-Tech Applications	Critical Alloy Materials Needed	Solar's Focus
Data Processing Logic chips: CPUs, GPUs	Pt, Ru, Cu, Ta	Ultra-high purity (UHP) alloys for advanced nodes front-end process
Data Storage Storage System: HDD, MRAM	Co, Fe, Pt, Ru	New alloys materials for HAMR technology and critical memory platters in storage
Data Interface Displays: TV, mobile, AR/VR, Foldable	In, Ga, Ag, Au	Broad set of materials in the Mini/Micro-LED layer stack
Data Transfer 5G, Network chips, interconnects, IC substrates	Au, Ag, Pd	New alloys for optimized chip packaging and connectivity

Megatrend 2

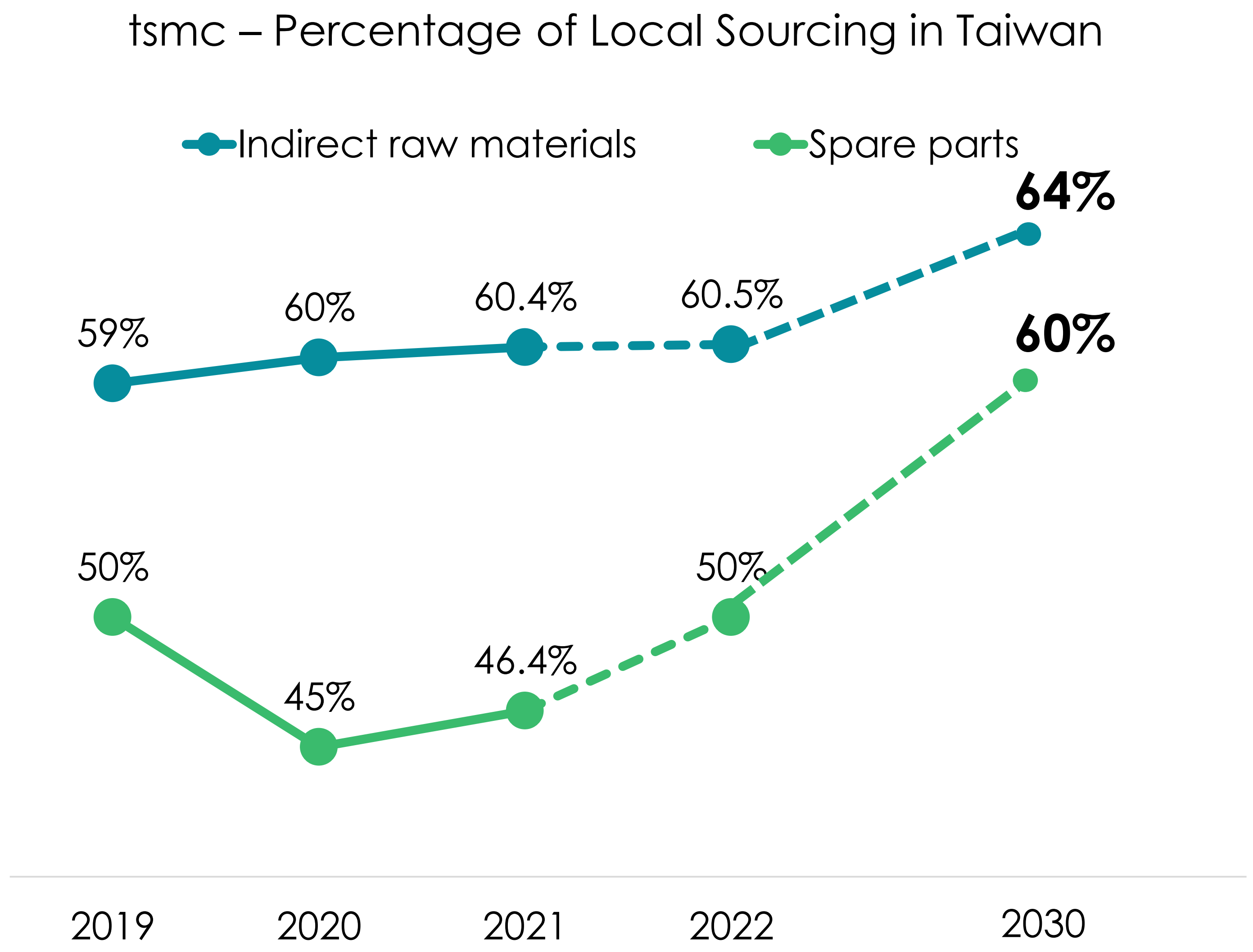
The growing importance of local supply chains and substitutes

- The pandemic and supply-chain disruption have inspired a build-out of local supply chains, particularly for critical materials and components.
- Taiwan remains the largest semiconductor hub in the world.
- Growing needs for finding local substitutes, particularly those previously dominated by foreign suppliers.
- Closer collaboration in the supply chain to develop mission-critical “designed-in” solutions.

The growing importance of local supply chains and substitutes



Source: TrendForce, 2022/6



Source: tsmc 2021 Sustainability Report

Target industry at a glance – Chip Manufacturing

Upstream Metal refining	Midstream Target Manufacturing	Downstream Sputtering & Coating	End-Customers Application
MITSUBISHI MATERIALS	江丰电子	tsmc	intel
JX金属	JX金属	UMC	QUALCOMM
Honeywell	Honeywell	SAMSUNG	SAMSUNG
GLOBAL ADVANCED METALS	TOSOH	intel	ST
东方钽业	PRAXAIR	GLOBALFOUNDRIES	AMD
		SMIC	TEXAS INSTRUMENTS
		SK hynix	NVIDIA
			freescale

We are gaining market share

SOLAR

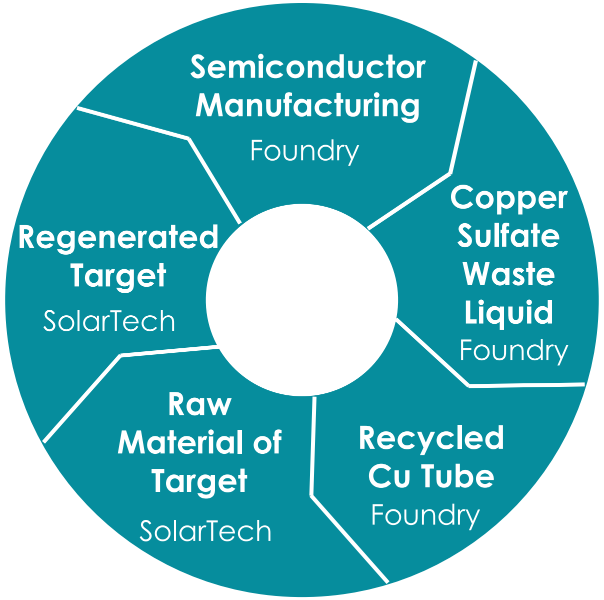
Megatrend 3

Companies' shift towards a circular economy

- Stricter legislation and pressure from society continue to push companies for a lower carbon footprint.
- Increasing resource scarcity and need for closing the loop.
- Growing complexity of materials to recycle, in particular end-of-life materials.
- Solutions to allow companies to provide higher recycled content and lower carbon footprint.

Collaborate with Wafer Foundry in Circular Economy

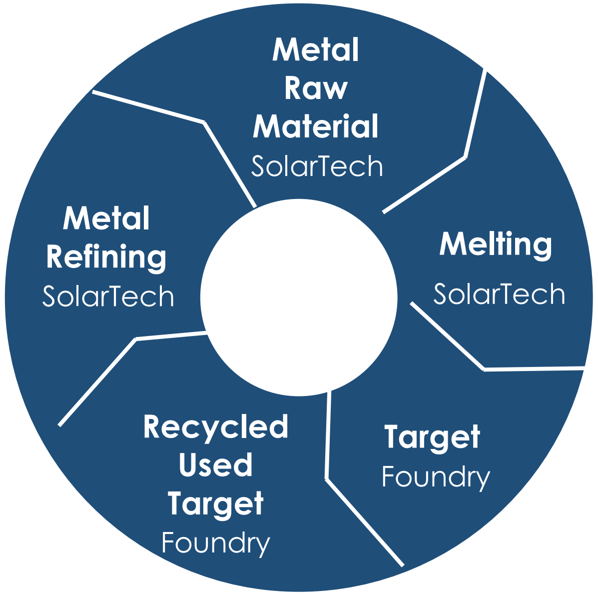
1st Copper Circular Economy for Foundry Operations



Nearly **10 tons** of regenerated target materials per year are returned to manufacturing process

Foundry customer reduces the output of waste liquid by **1,800 tons** per year

Recycling and Refining of Precious Metal Residual Targets

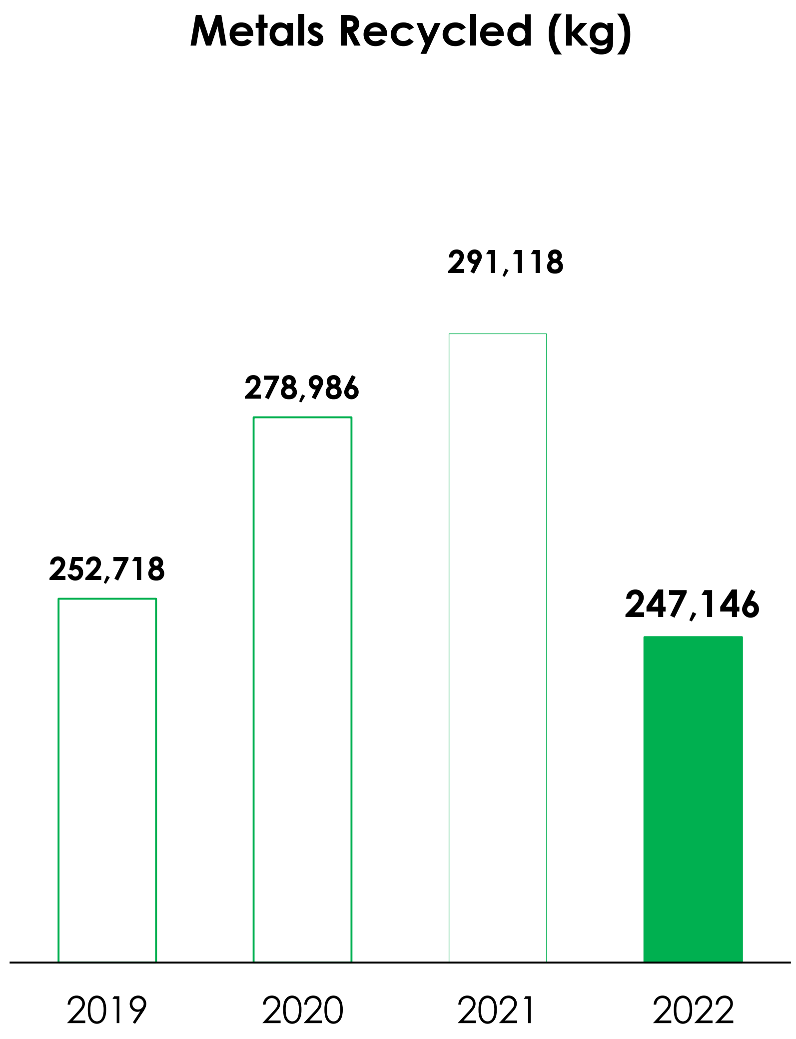


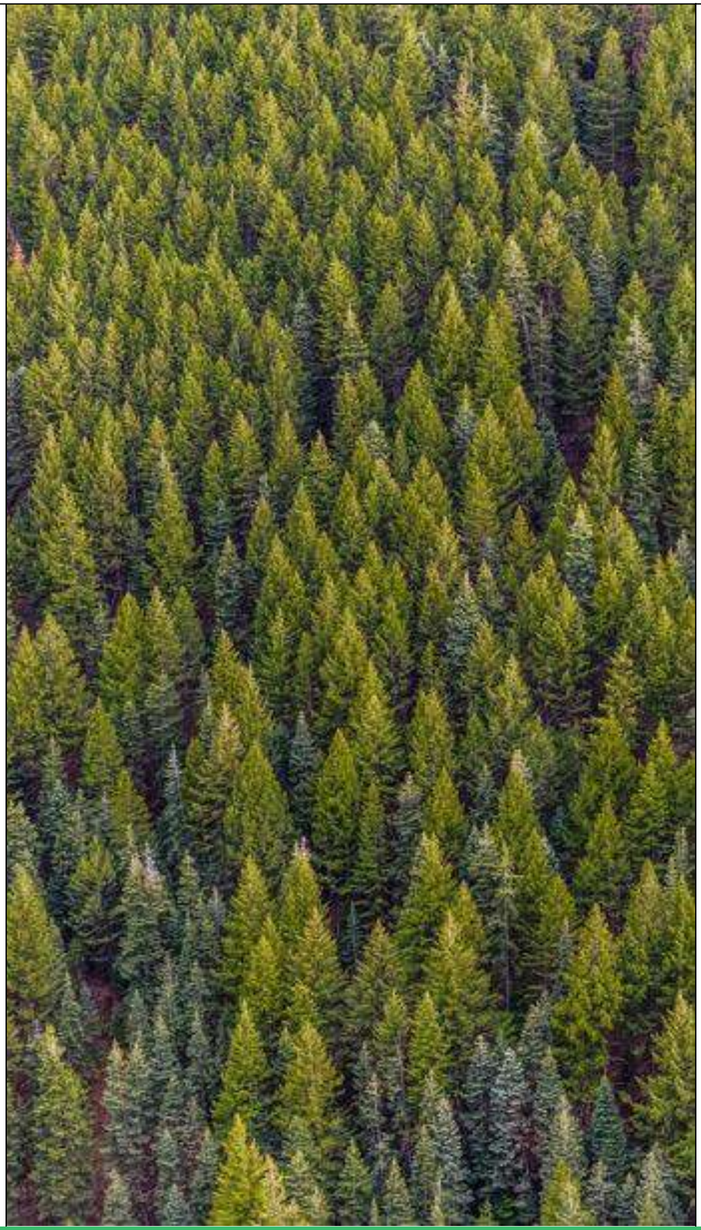
50% of precious metal targets are made from recycled raw materials every year

1st certified 100% Recycled Gold Material used in brand products

- In 2017 initiated by Brand to dialogue with SolarTech for the feasibility of the concept.
- Within 2019, several meeting with BRAND focused on the feasibility to apply 100% recycled gold material.
- As of Q2 2020 the recycled product was certified by UL2809 and Q3 released by PCB vendor for production.
- In Sept. 2021 100% recycled gold used on main logic board was reported.

Reducing carbon emissions through material recycling





441,564 tons

of carbon emissions saved per year

equivalent to

carbon footprint generated by

98,783 people

per capita carbon emission in the world (2019, 4.47 ton)

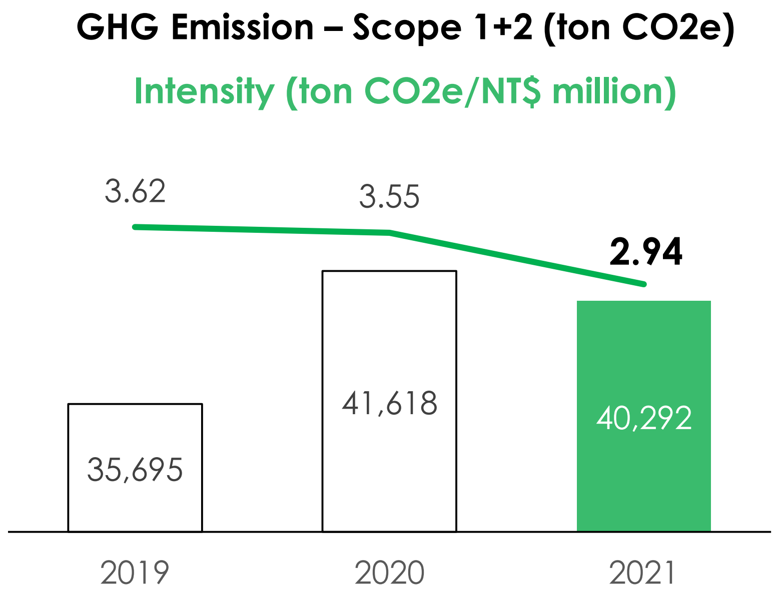
equivalent to

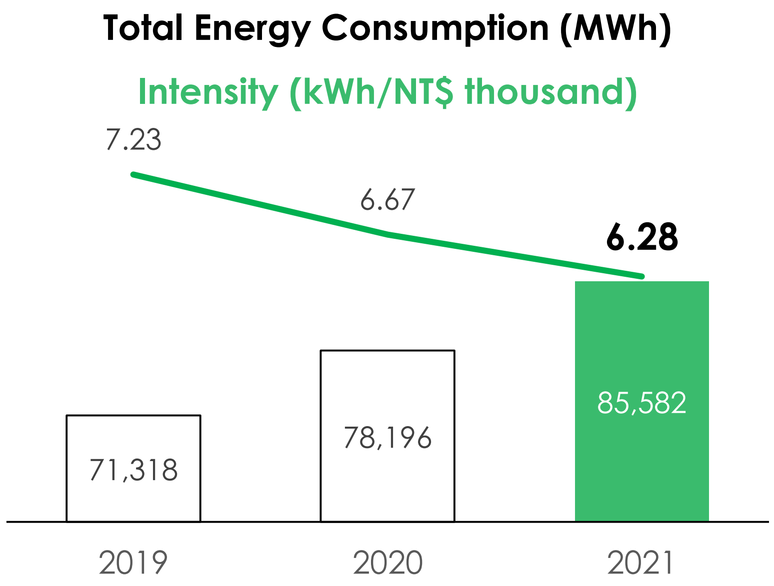
1,128 central park

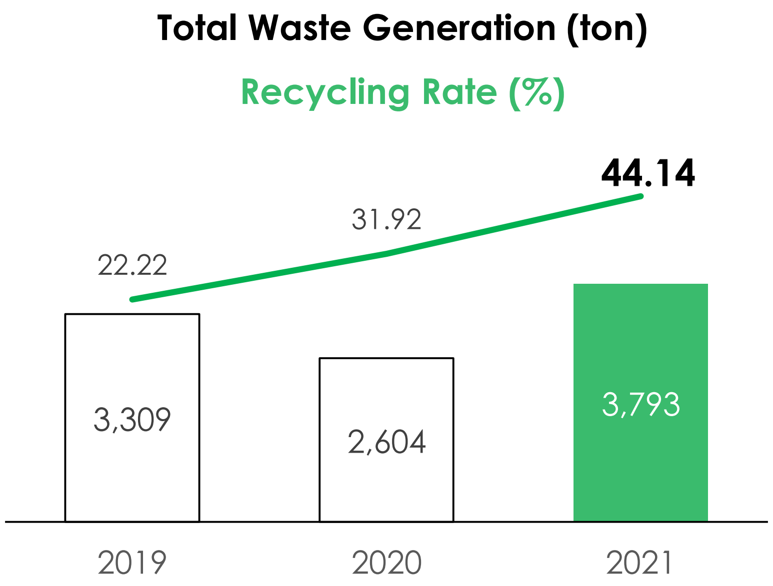
at New York

Source: Solar ESG Report

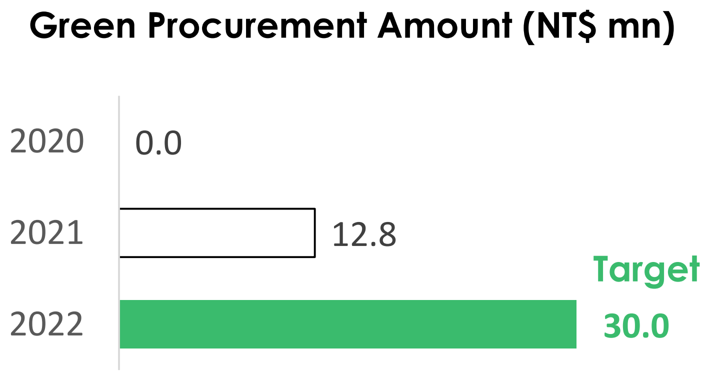
Continued progress in ESG



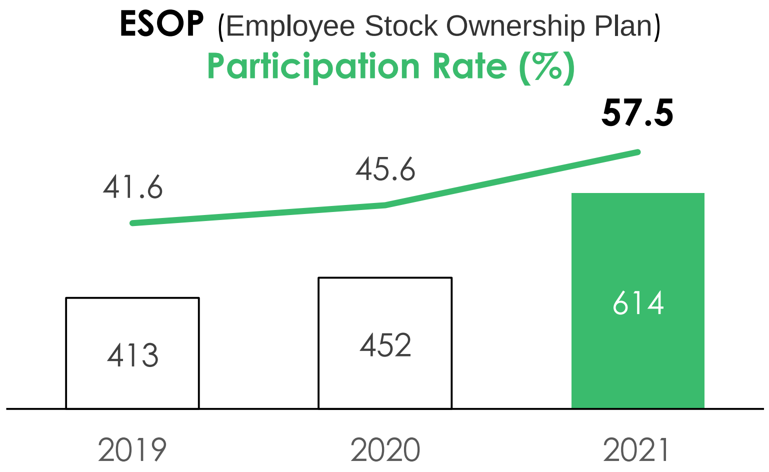




Supply Chain Management



Talent Attraction & Retention



Governance

Board Composition

Digital transformation to deliver maximum value

Connecting Our Factories…

…To Capture the Data

One Standard

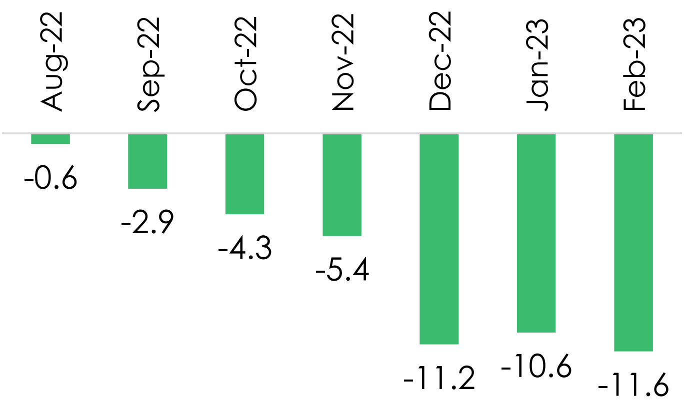
… Based Upon Lean Workflow

Transformed With Automation

- Yield optimization
- Predictive algorithms
- Proactive maintenance work
- Real-time fault detection & resolution
- Real-time carbon footprint monitoring
- Remote problem-solving expertise

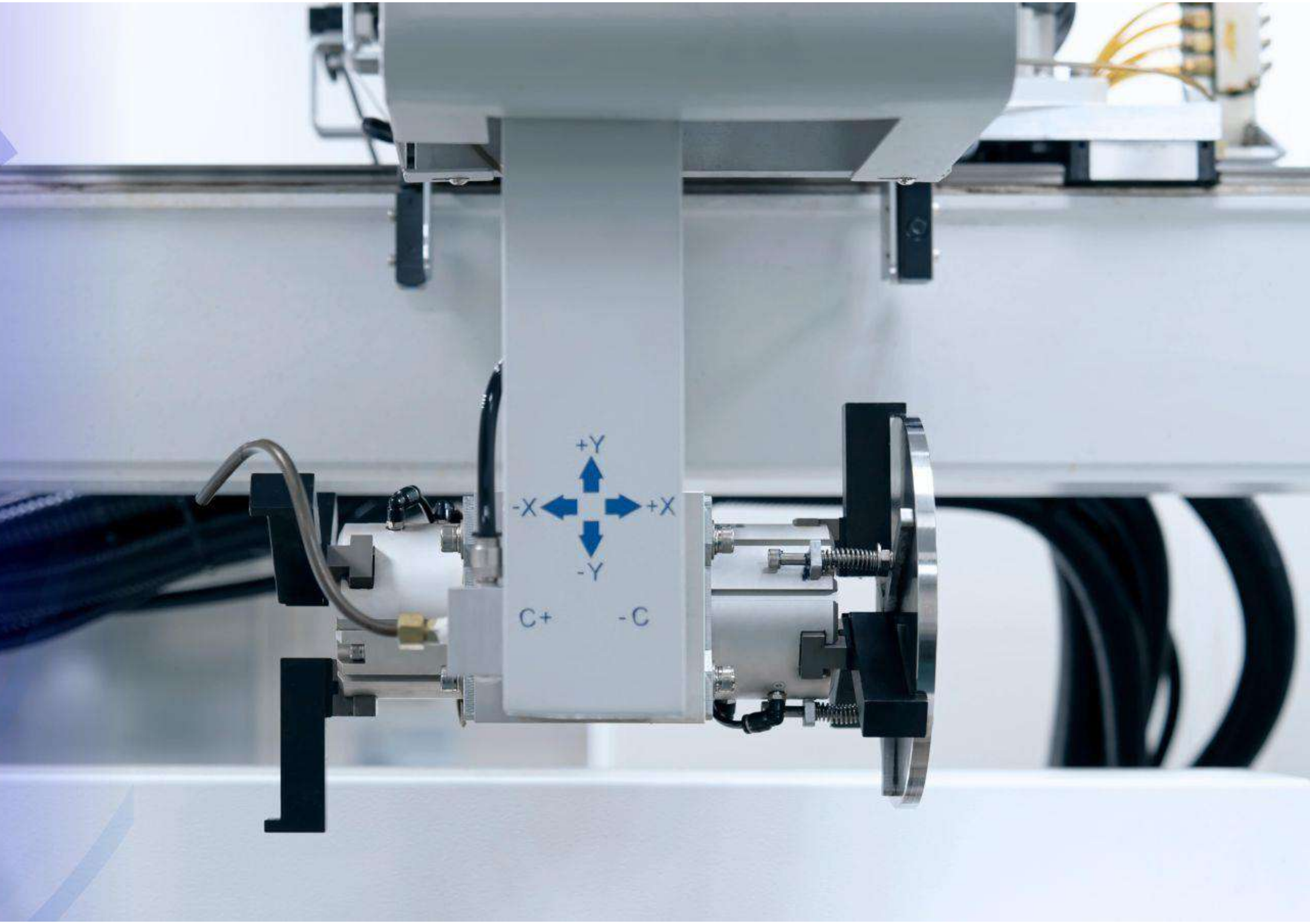
- **Efficient and reliable sourcing**
- **Better execution**
- **Leaner, simpler product line-up**

Monthly cost reduction amount (vs Jul-22) (NT$mn)

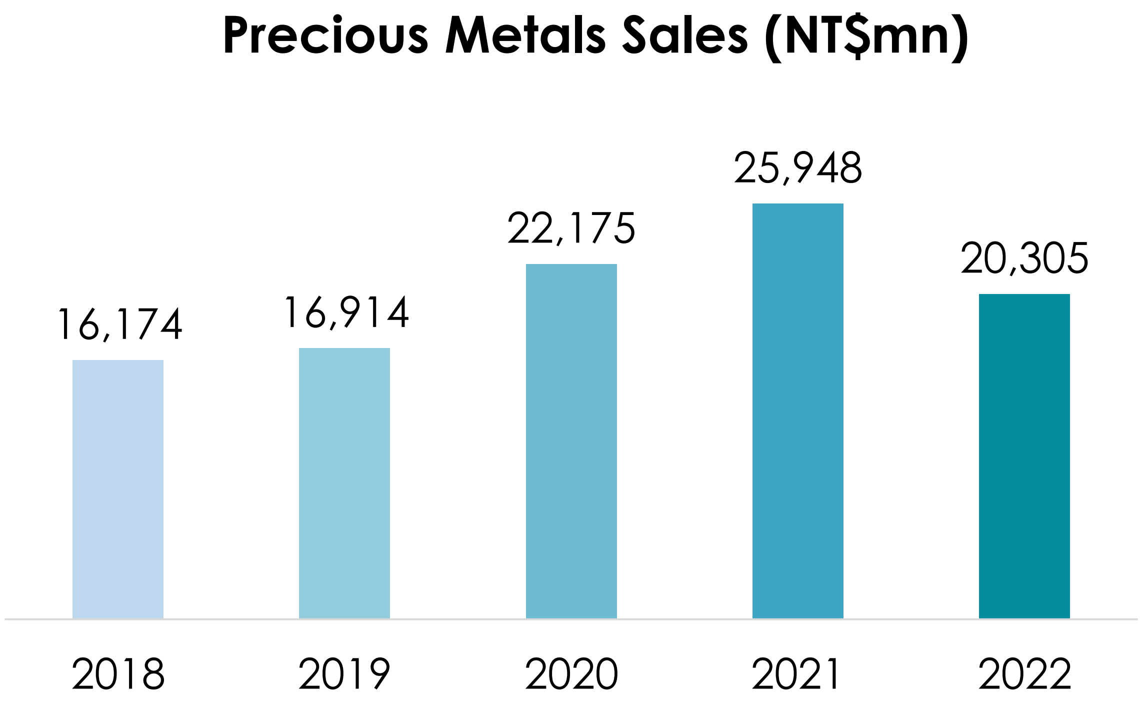


PART 3

Measurement



Our revenue model and trends



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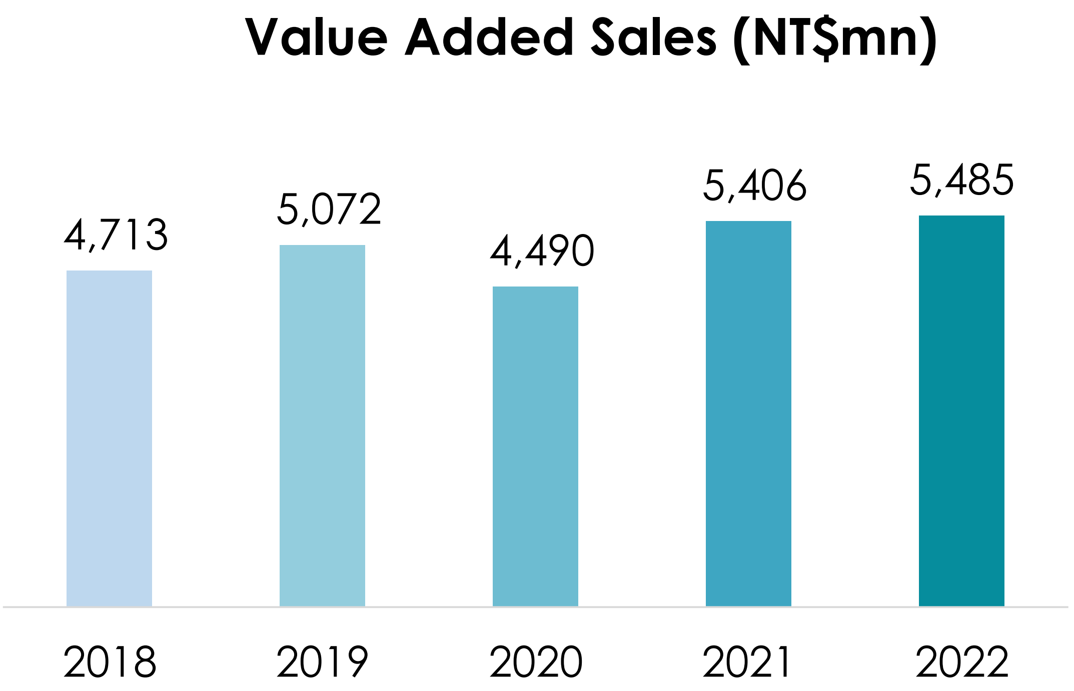
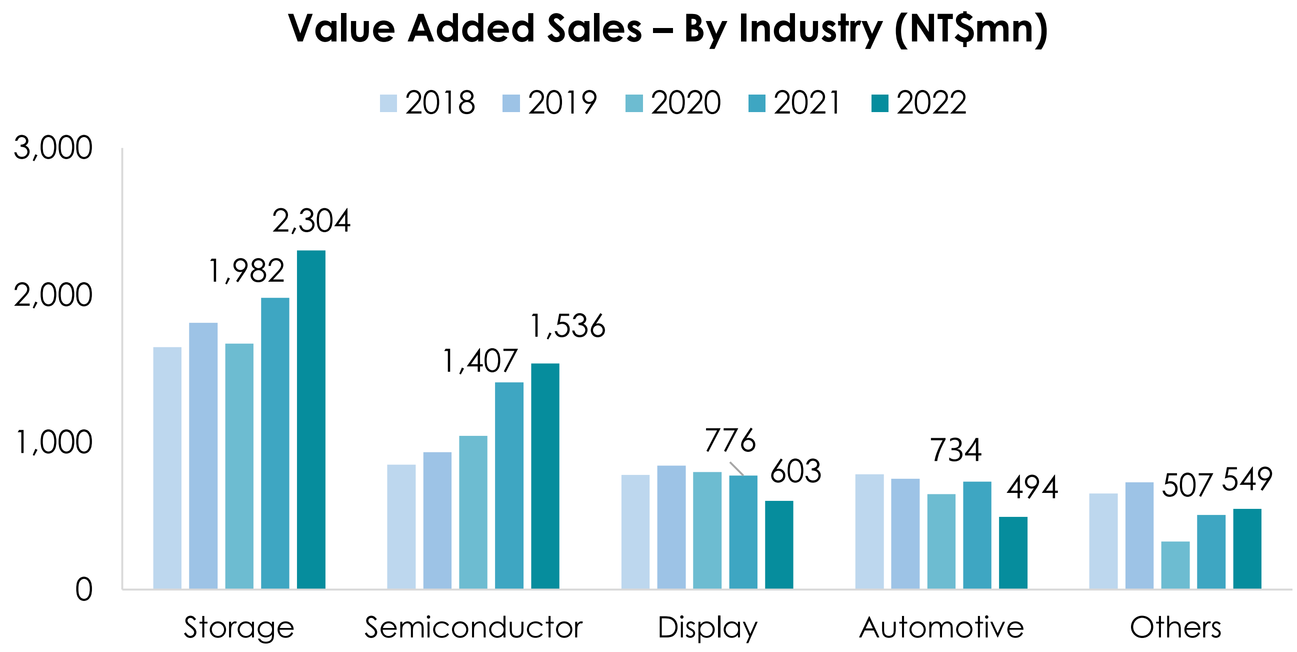
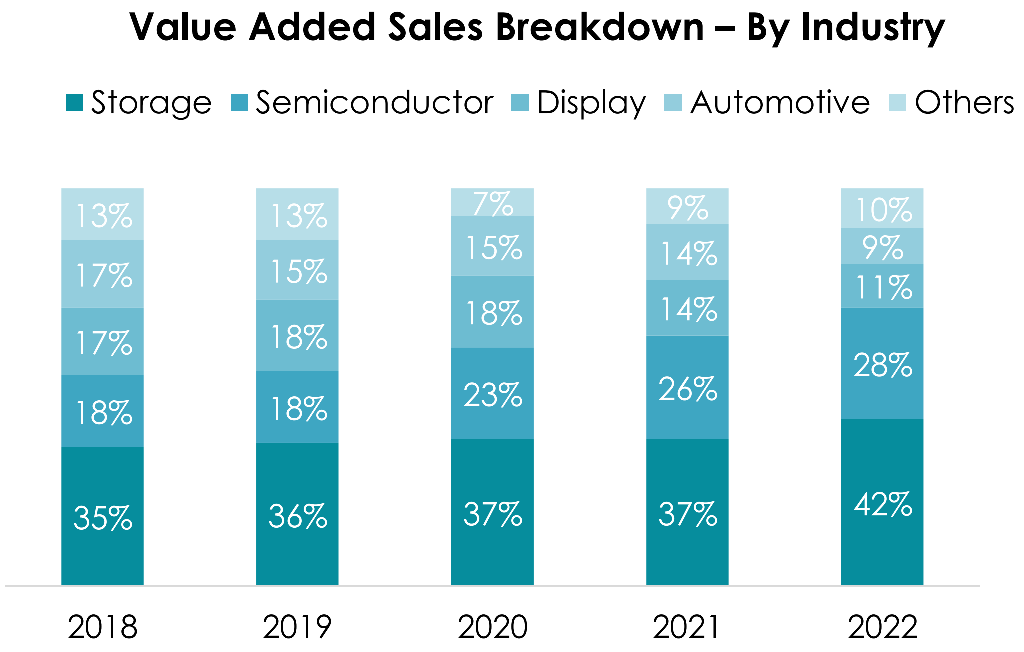


Value-added sales (VAS) reflect the true value of the products that we deliver to our customers, regardless of the precious metal prices.

Value Added Sales Break Down By Industry

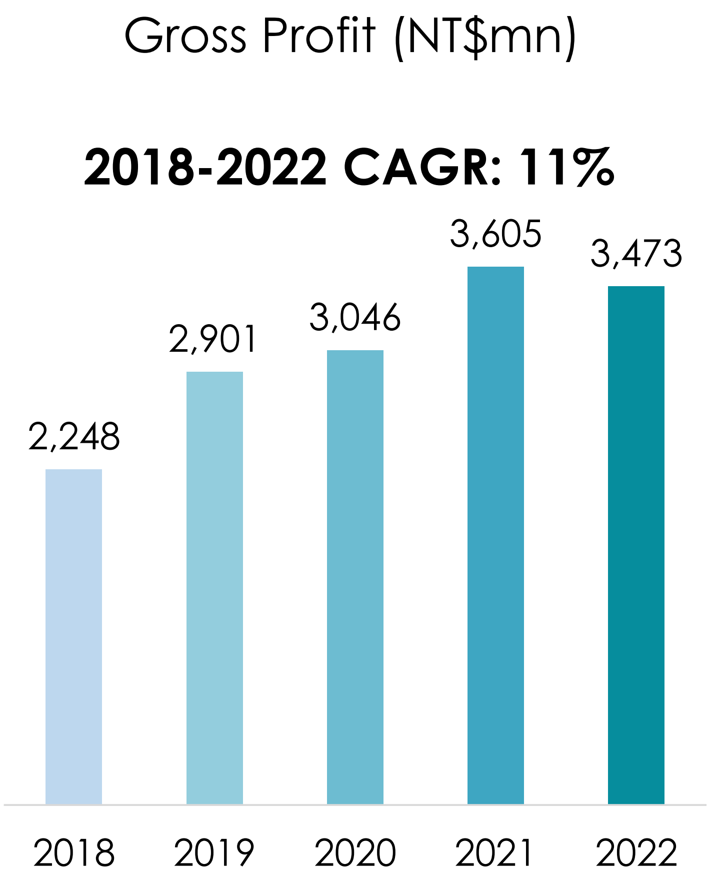


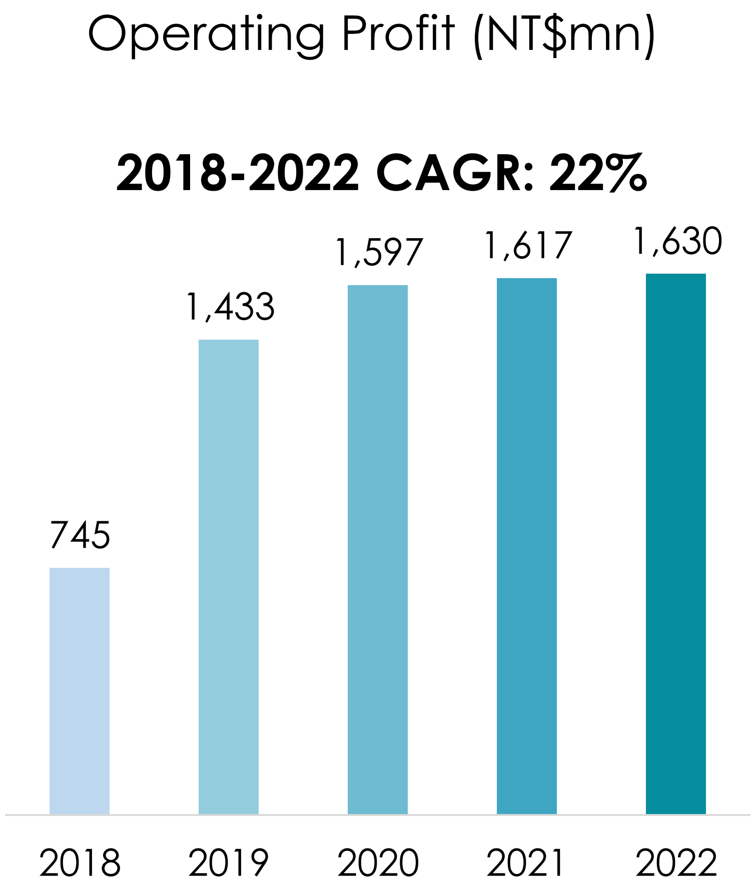


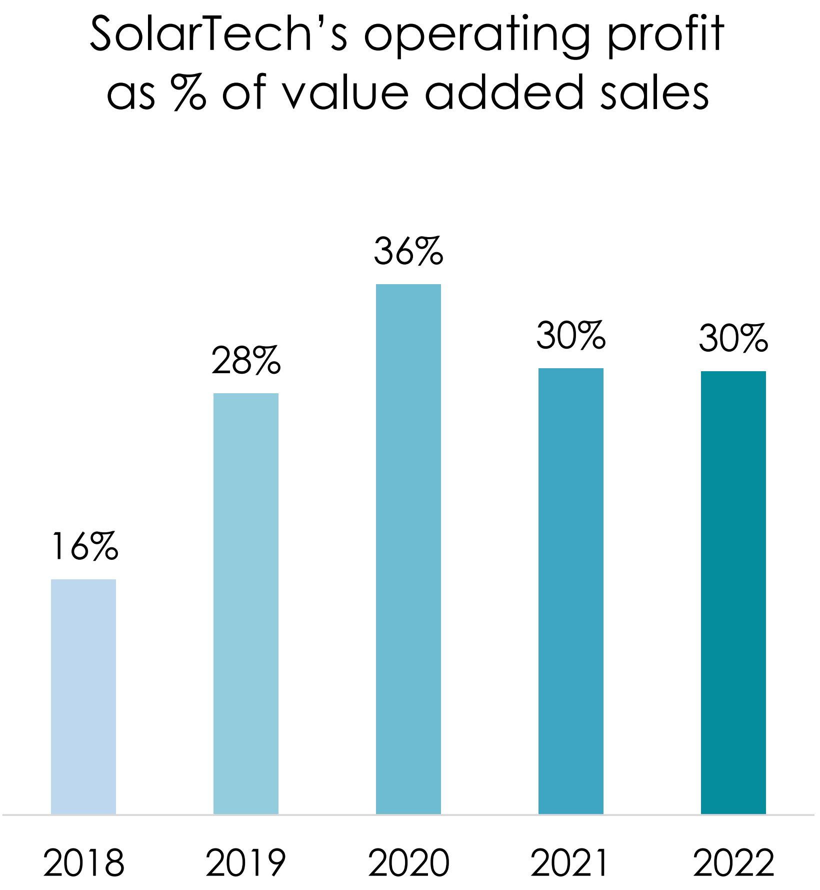
Value added sales : Our business model includes a significant amount of pass-through precious metal revenue that mask the true profitability. Value added sales shows the revenue without pass-through precious metal revenue can better present the company's actual business status to avoid being masked by precious metal transaction.

By Industry : Target materials for storage and semiconductor industries are the main growth drivers with 16% and 9% growth in 2022 respectively.

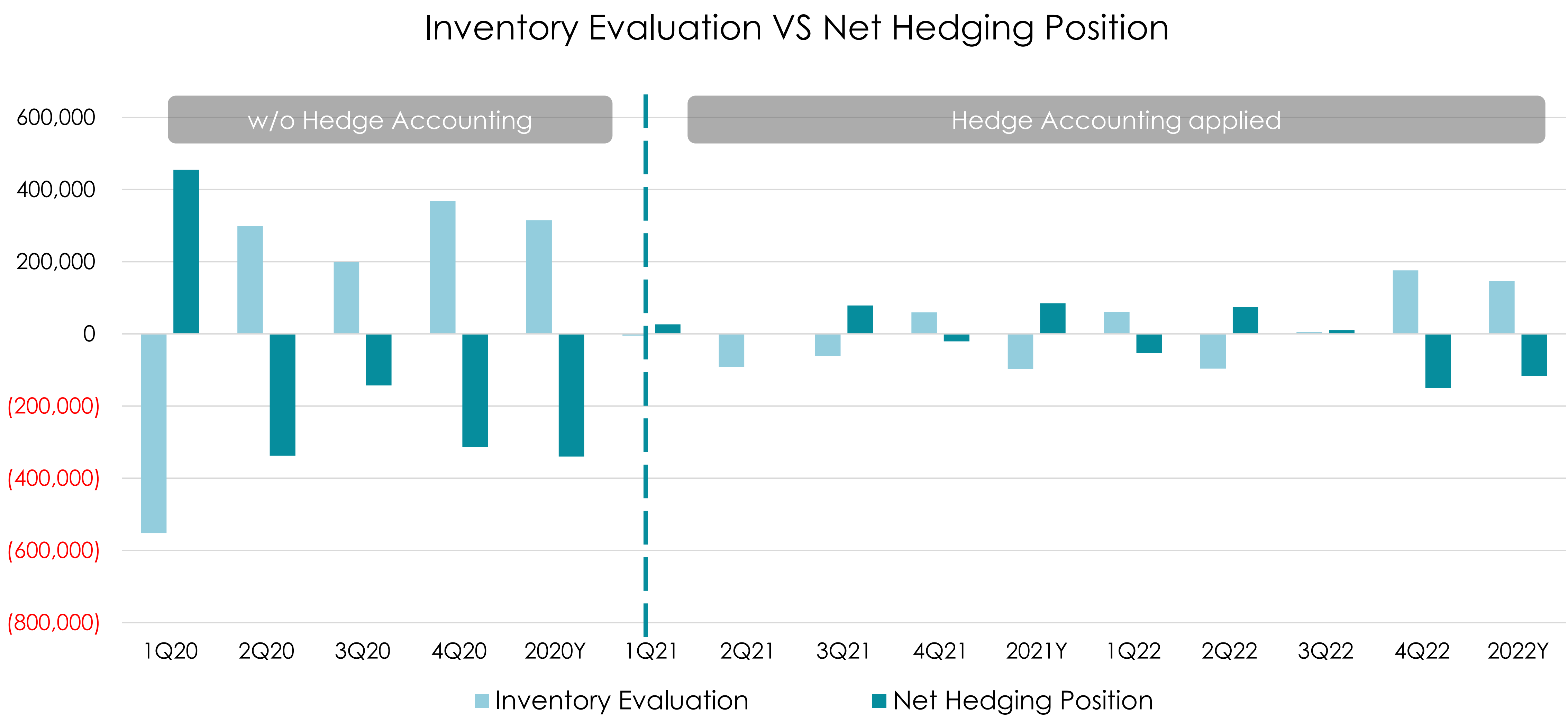
Strong profitability





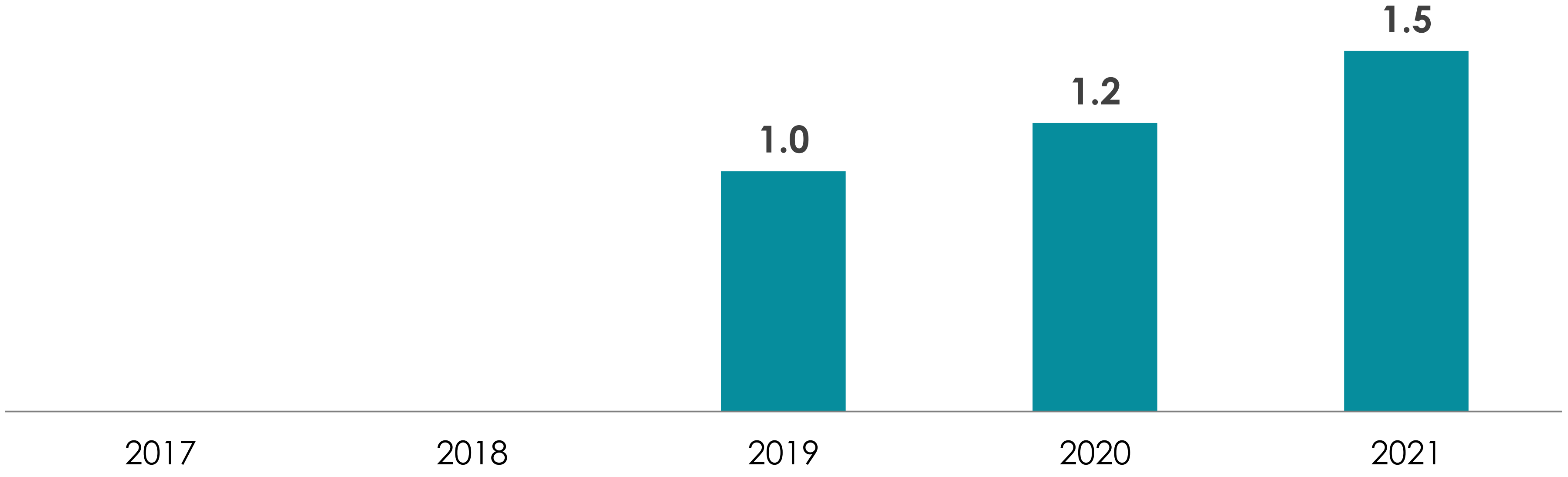


Hedge Accounting (under IFRS 9)



A system was built to trace and provide the existence of economic relationship between the hedged item and hedging instrument.

Dividend Payout and Capex (2017 ~ 2021)



	2017	2018	2019	2020	2021
Payout Ratio (%)	-	-	48%	84%	71%
Dividend Yield* (%)	-	-	2.4%	2.5%	3.8%
Capex (NT$ mn)	142	266	991	352	706
Capex to Sales (%)	0.9%	1.3%	4.5%	1.3%	2.3%

*Note: Cash yield is calculated based on Solar's market cap on the day before ex-dividends.

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