

The background is a collage of four images. The top-left image shows a cityscape at sunset with network lines and nodes overlaid. The top-right image shows a cityscape under a blue sky with network lines and nodes. The bottom-left image shows a cityscape with a baseball field and a highway. The bottom-right image shows a cityscape with a baseball field and a river.

Investor Presentation



**SOLAR APPLIED
MATERIALS TECH. CORP.**
(1785 TT/TW)

September 2023

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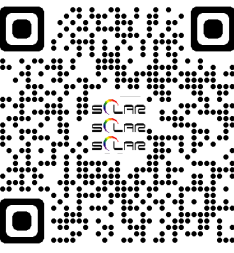
Understandings

PART 2

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Measurement



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PART 1

About SOLAR

A world-leading manufacturer of precious and rare metals for industry application

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Company Info

Organization and Executives

Policy

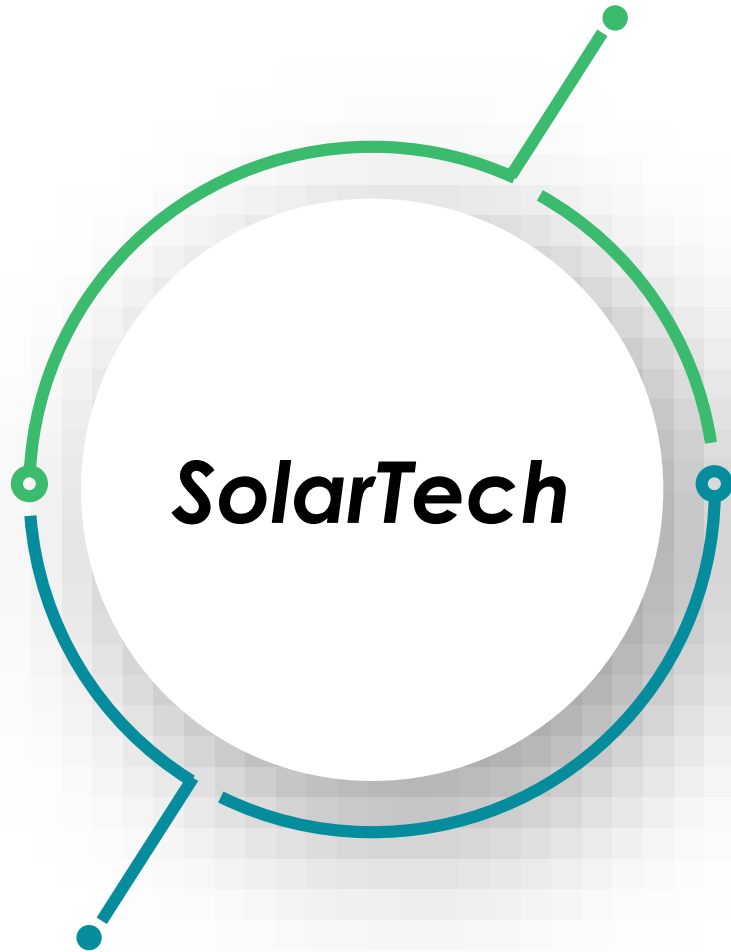
Milestones

SolarTech was selected to join TPEX ESG 30 Index

SolarTech was selected as a constituent stock of the TPEX ESG 30 Index, and is ranked among the top ten constituent stocks.

The TPEX ESG 30 index, compiled by TPEX and Taiwan Index Plus, recognizes the stocks that combine investability and sustainability.

Circular Economy



Advanced Material Solutions

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 **SUSTAINABLE** way

Company milestone

Alloy design and target manufacturing for thin film applications



PGC / PSC

Taiwan No.1



Gold / Silver
Chemicals and
Refining

1978



ODS

**(Optical Data Storage)
Sputtering Target**

World Leading

**Sputtering target
manufacturing**

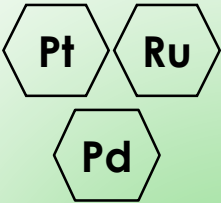
1998



MDS

**(Magnetic Data Storage)
Sputtering Target**

World Leading



Complex alloy
design and
manufacturing

2004



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



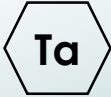
**Ceramic target
manufacturing**

TCO (Transparent
Conductive Oxide)
materials design

2008



SEMI



Ultra high purity
semiconductor
materials

2016



SEMI



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

2018



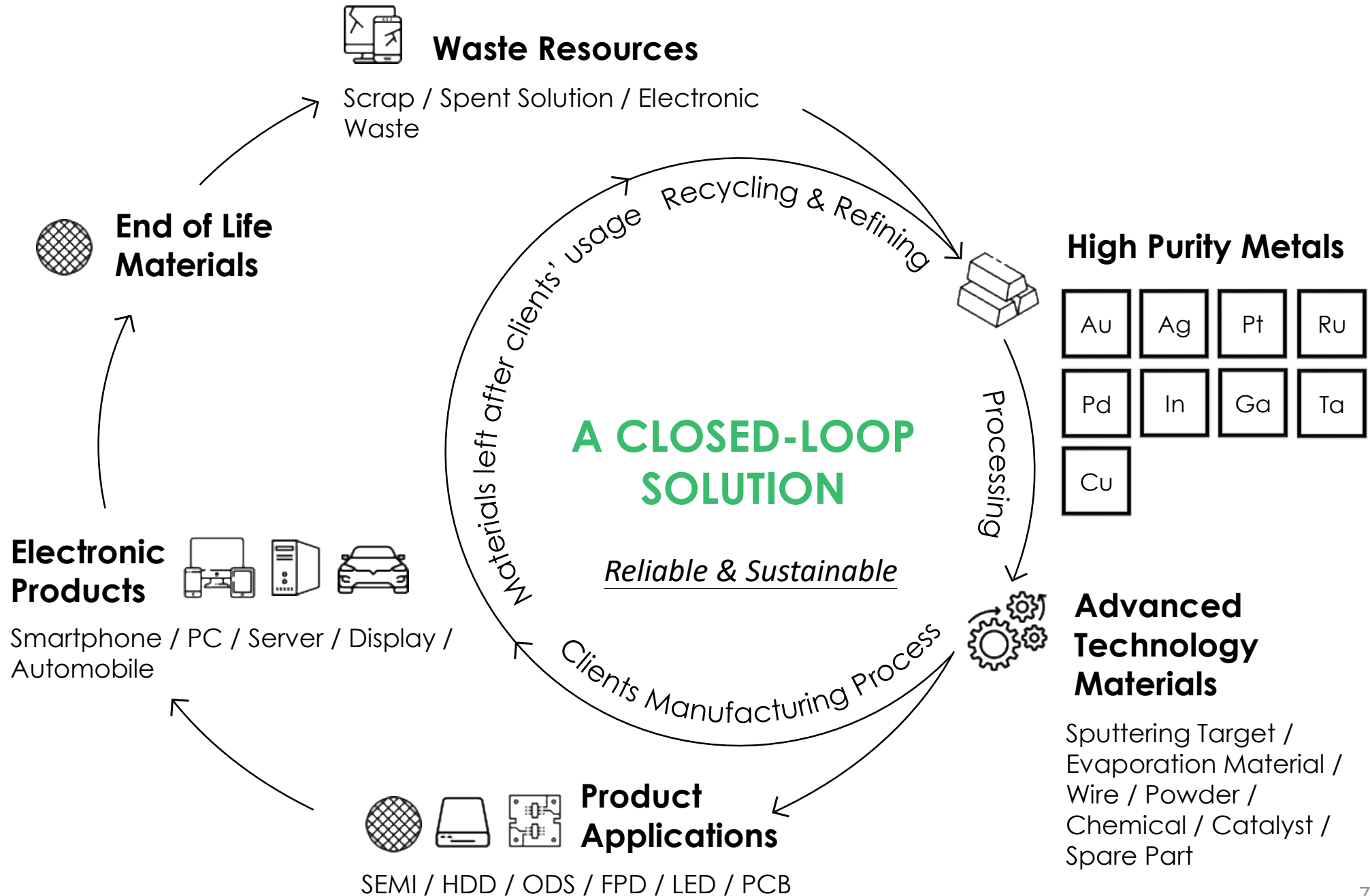
Digital Transformation

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)

1,521

Employees (2022)



Tainan, Taiwan

Headquarters



5 Factories

Located in Taiwan
and Mainland China

Kunshan,
Jiangsu, China

Tainan, Taiwan

NT\$10.6 Bn

Total Sales in 1H23

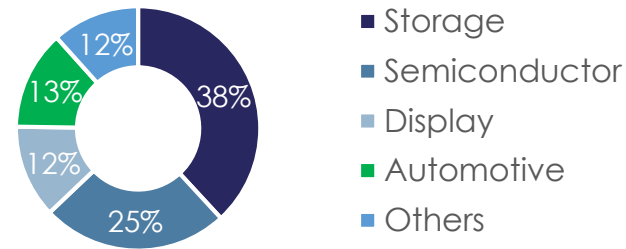
-27.4% YoY

NT\$2.6 Bn

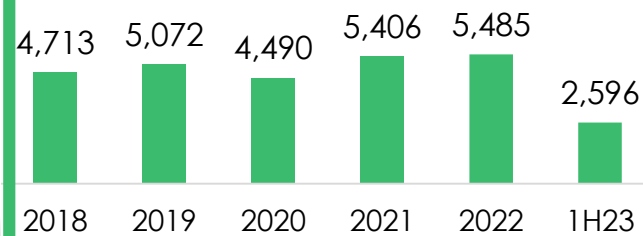
Value Added Sales in 1H23

-9.9% YoY

Value Added Sales Breakdown by
Applications (1H23)



Value Added Sales (NT\$m)



NT\$23.1 Bn

US\$736 Mn

Market Cap as of Jul, 2023

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

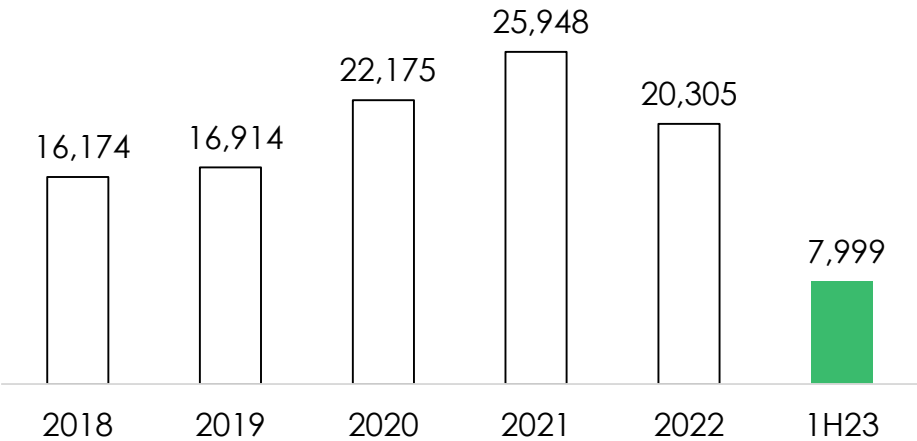
Strong track record of growth generation

Precious Metals Sales

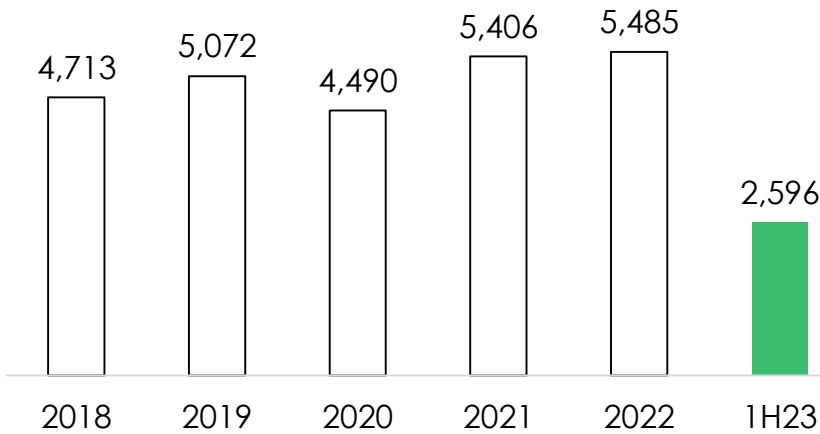


Precious metals are sold mainly as part of raw materials in products. In addition to the growth of business volume, revenue is also subject to changes in precious metal price trends (depending on if the materials are on consigned basis or not).

Precious Metals Sales (NT\$mn)



Value Added Sales (NT\$mn)

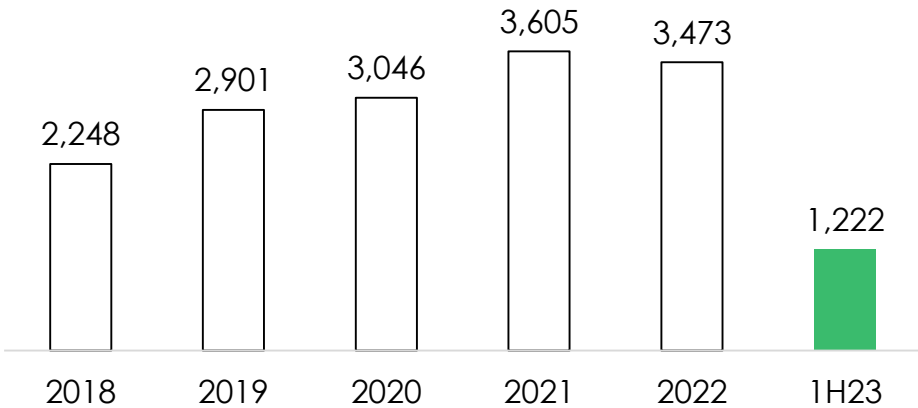


Value Added Sales (VAS)

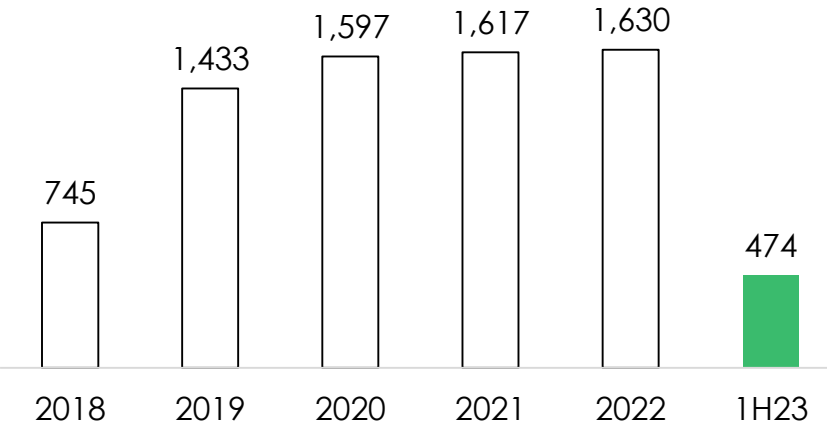


Value-added sales (VAS) reflect the true value of the products that we deliver to our customers, regardless of the precious metal prices.

Gross Profit (NT\$mn)



Operating Profit (NT\$mn)

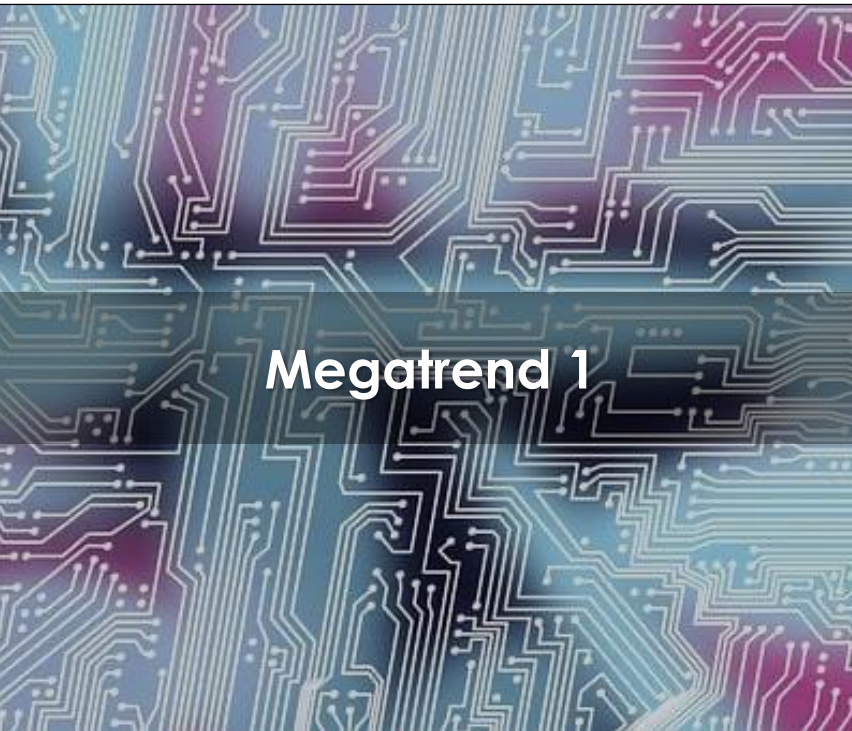


PART 2

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

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

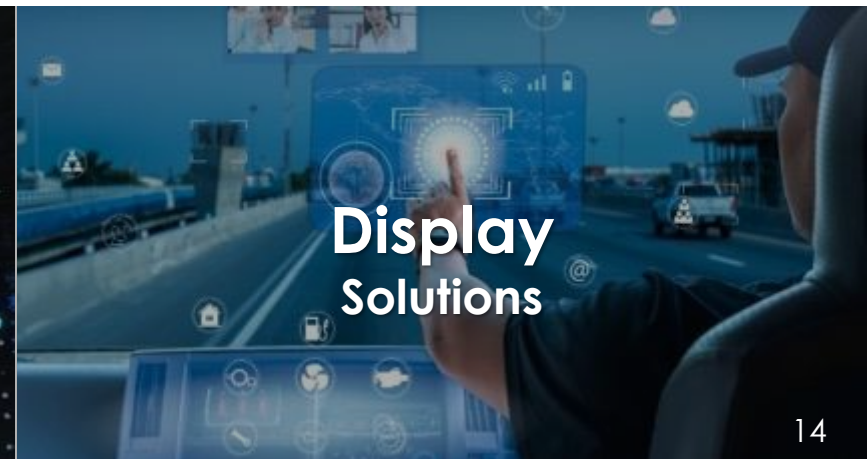
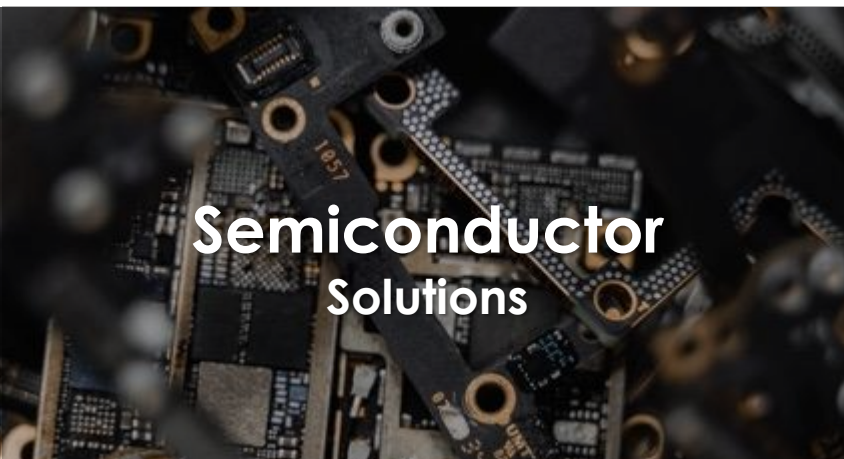
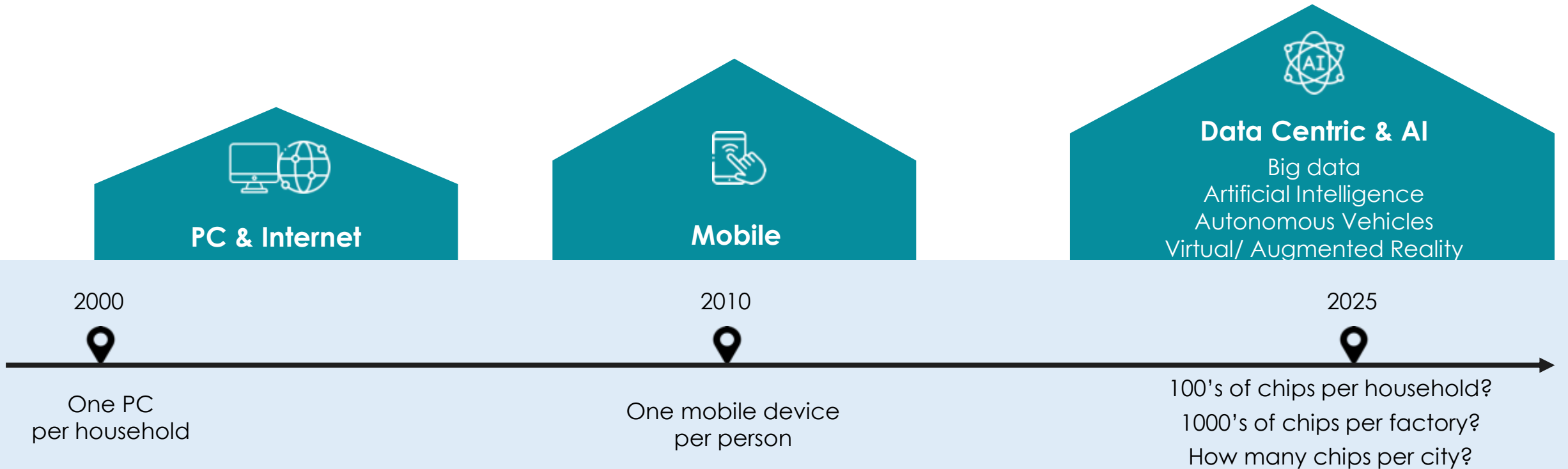
- Closed-loop metal recycling solution support climate change mitigation.
- Committed to continued advancing ESG initiatives.

Megatrend 1

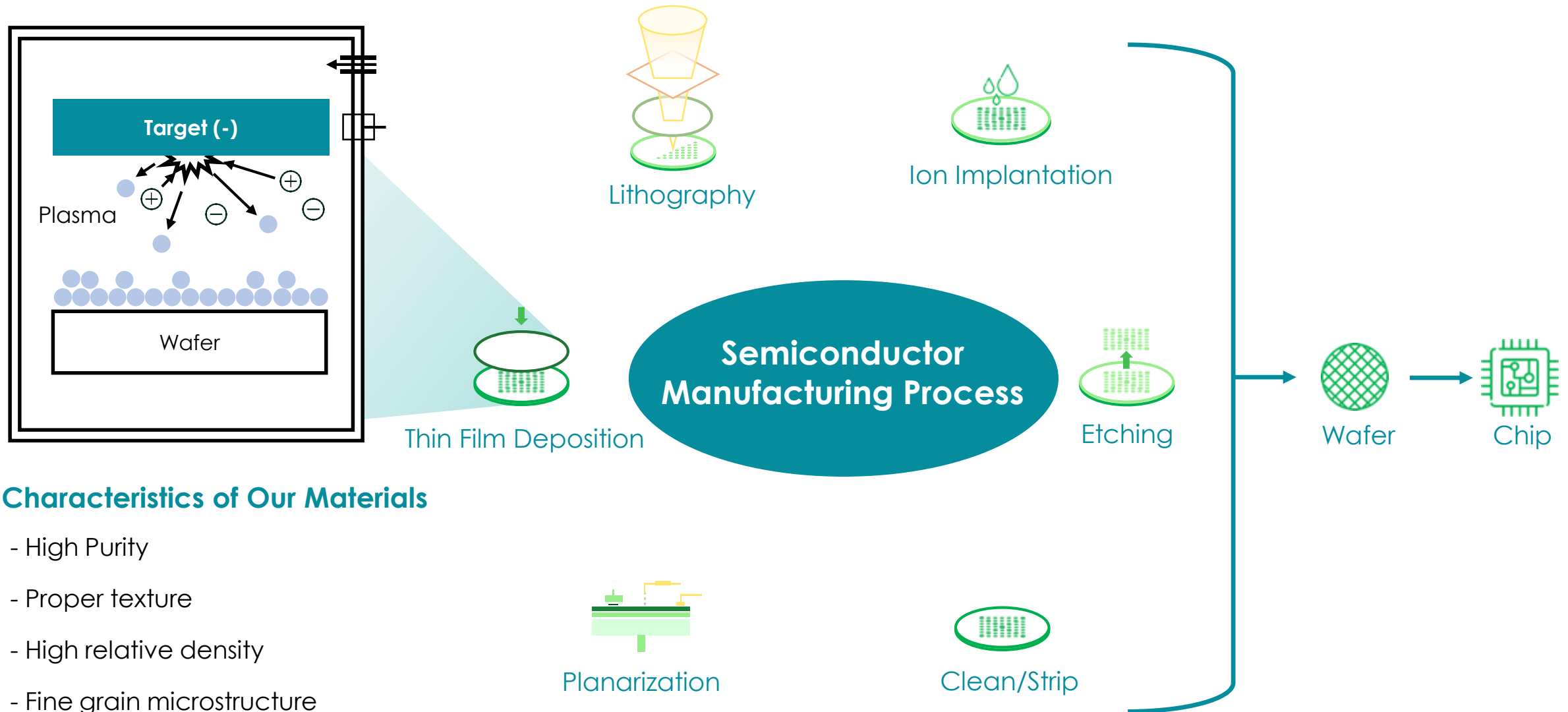
Increasing complexity of
electronic devices
requiring new solutions
and more varieties of
alloy materials

- 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



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

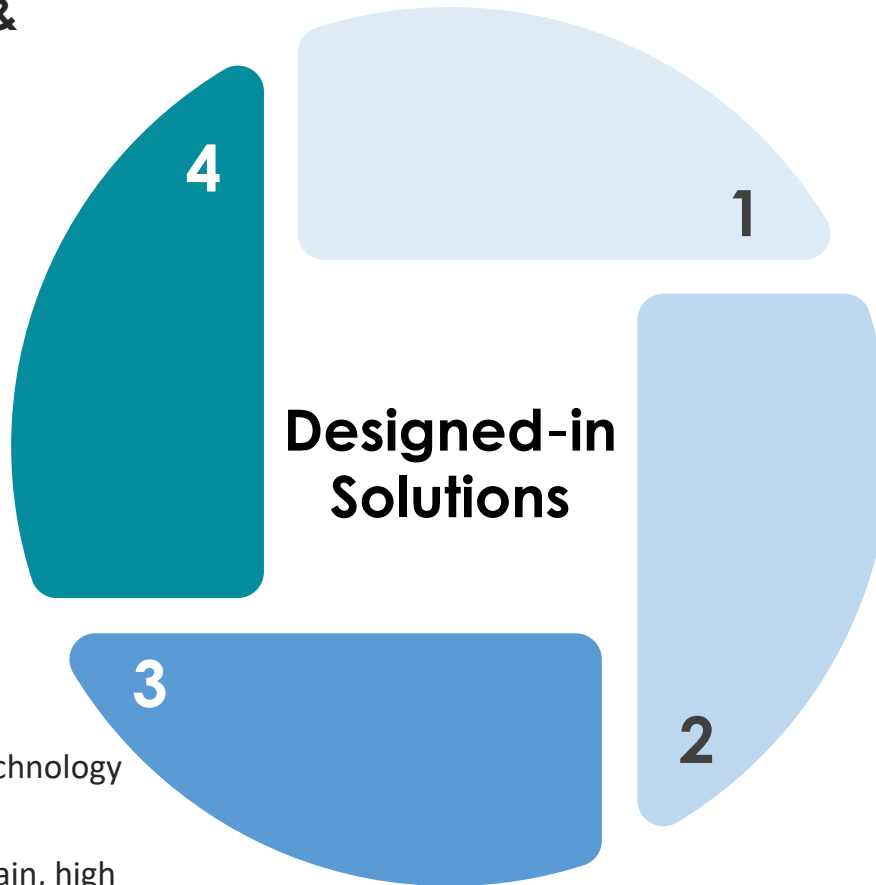
High Performance Products

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

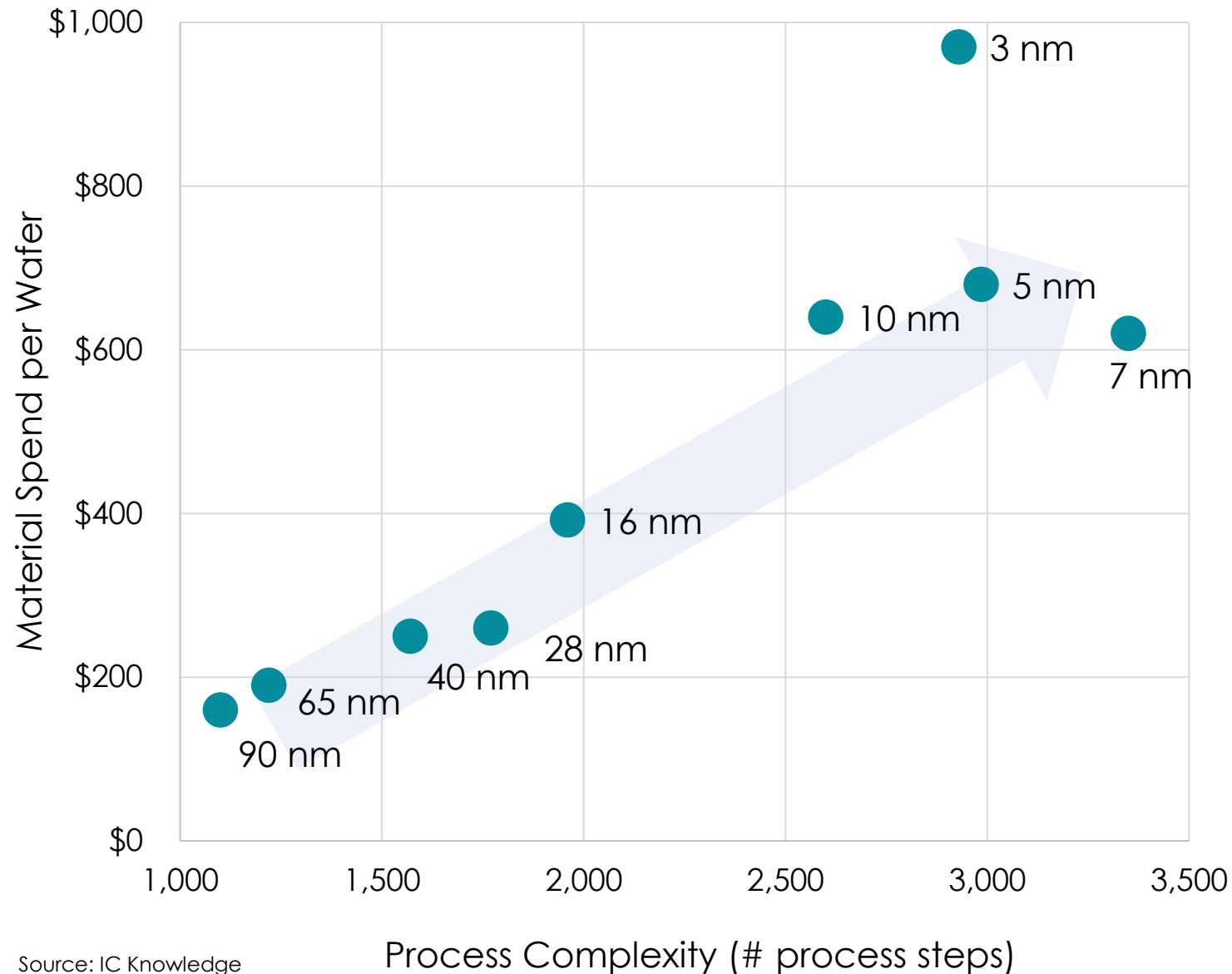
2 - Applying our core competencies and expertise

Materials Science

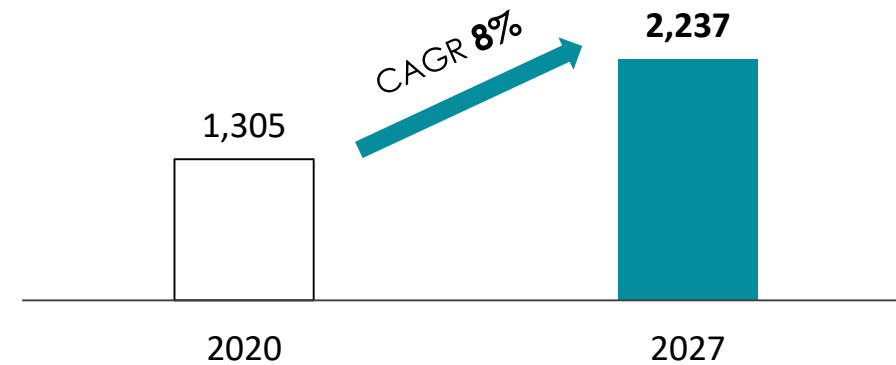
Alloy Design
> 3000 alloys

Applications and
Process Know-How

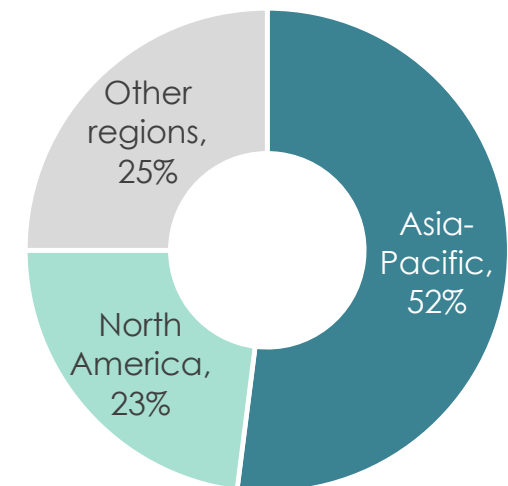
More complex chip drive more materials demand



Global Sputtering Target for Semi (Value in US\$m)



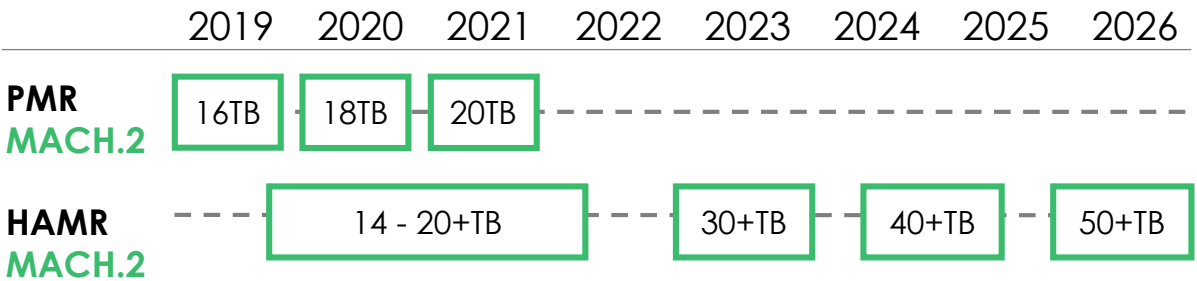
Sputtering Target Consumption



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**



Source: Seagate 2021 Analyst Day, 2021/2

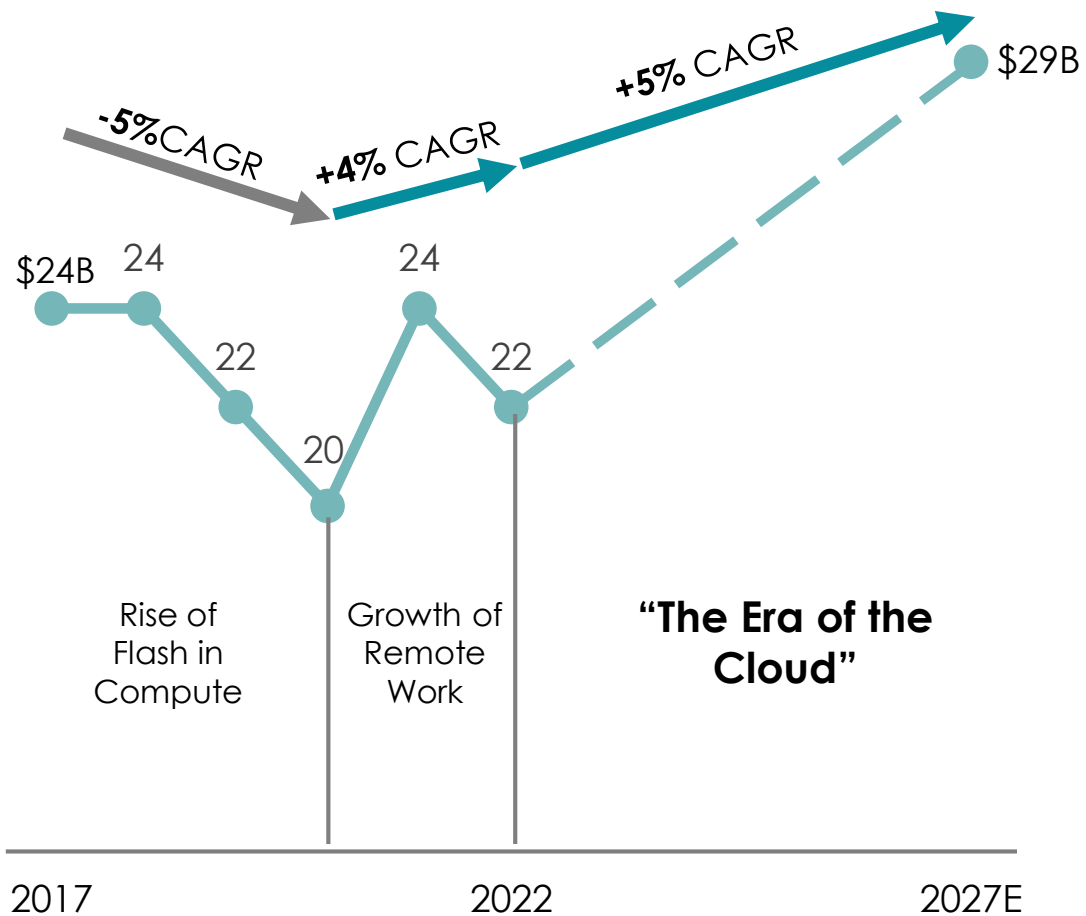
- **Western Digital will adopt HAMR technology for large capacity HDD in the future**



Data explosion drive higher HDD capacity demand

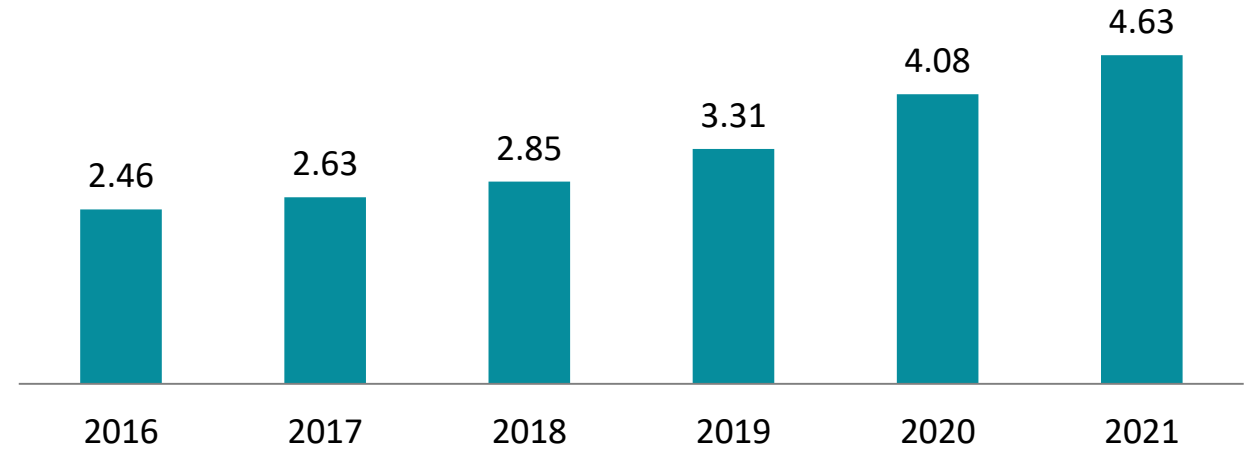
HDD Revenue TAM (US\$bn)

2017-2027E

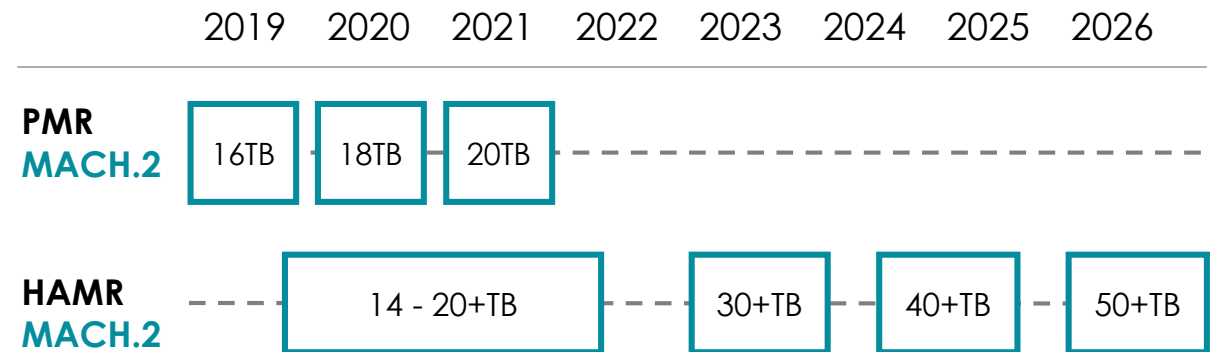


Source: WDD Investor Day, 2022/5

Average HDD platters in each drive



Seagate Product Roadmap



Source: Seagate 2021 Analyst Day, 2021/2

HDD & SSD are highly complementary technologies

	HDD	SSD
Features	lower cost, mass capacity	High speed
Application	more storage volume	read/write faster

- HDD & SSD are highly complementary technologies, not substitutes
- The significant cost differences make HDDs more attractive in scenarios where “mass storage capacity without the need for high speed” is required
- Given the cost incentive, data center or enterprise server customers are expected to continue to favor HDD usage in the coming decade

3 Cold data storage places high demands on HDD

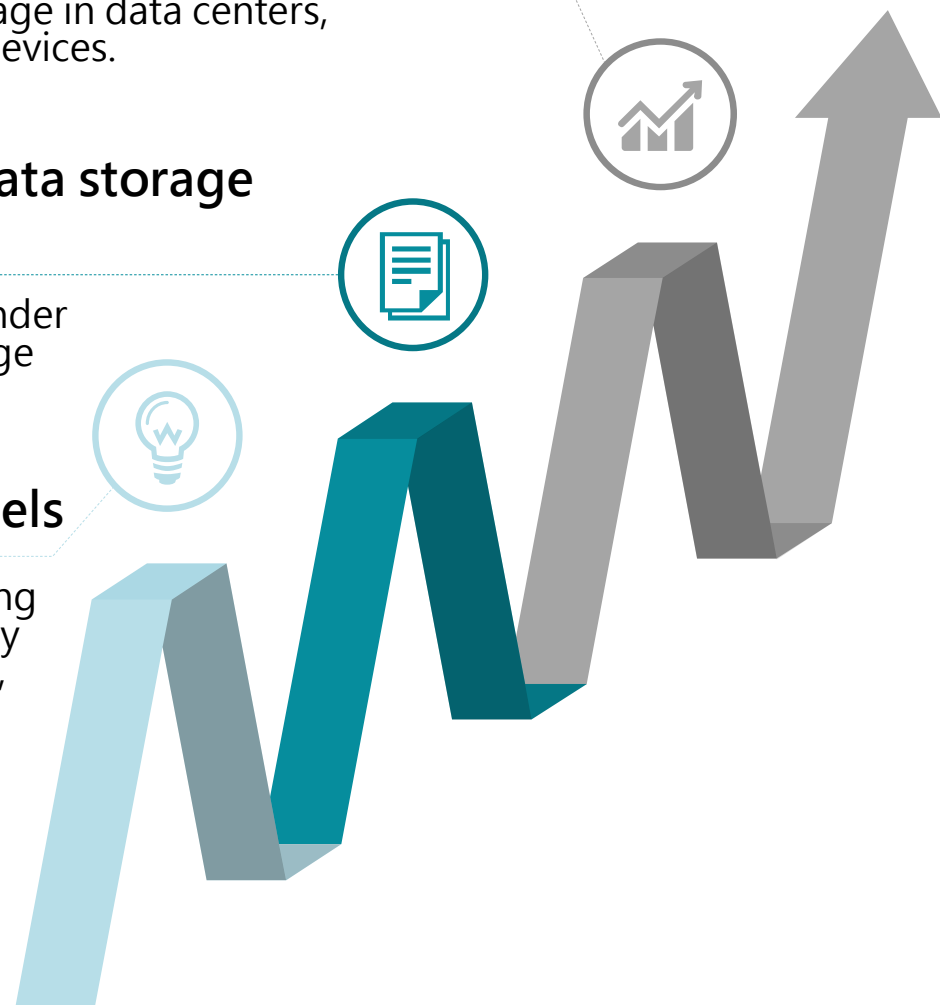
HDDs are designed for versatility in a variety of environments, making them a reliable solution for cold data storage in data centers, enterprise servers, and personal storage devices.

2 Increased demand for cold data storage driven by data growth

Many AI language models are currently under development, resulting in increased storage requirements for AI.

1 Growing demand for AI models

The market for generative AI is experiencing a surge in growth, driven by its increasingly diverse applications in text, images, music, and more.

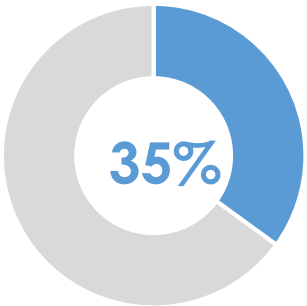


Solar is leading in HDD target supply

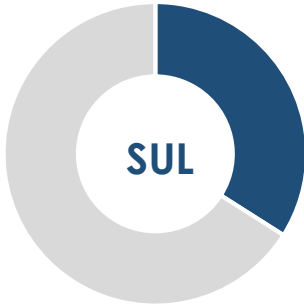
Layers layout of HDD



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

Data Processing

Logic chips: CPUs, GPUs

Critical Alloy Materials Needed



Solar's Focus

Ultra-high purity alloys for Semiconductor

Data Storage

Storage System: HDD, MRAM



New alloys materials for HAMR technology and critical memory platters in storage

Data Interface

Displays: TV, mobile, AR/VR, Foldable



Broad set of materials in the Mini/Micro-LED layer stack

Data Transfer

5G, Network chips, interconnects, IC substrates



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.

Target industry at a glance – Chip Manufacturing

Upstream
Metal refining



Midstream
Target Manufacturing



Downstream
Sputtering & Coating



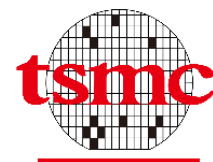
End-Customers
Application



Honeywell



Honeywell



SAMSUNG



SAMSUNG



We are gaining market share



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.

Geopolitics raise the importance of the circular economy

China has started restricting exports of Gallium and Germanium in August 2023

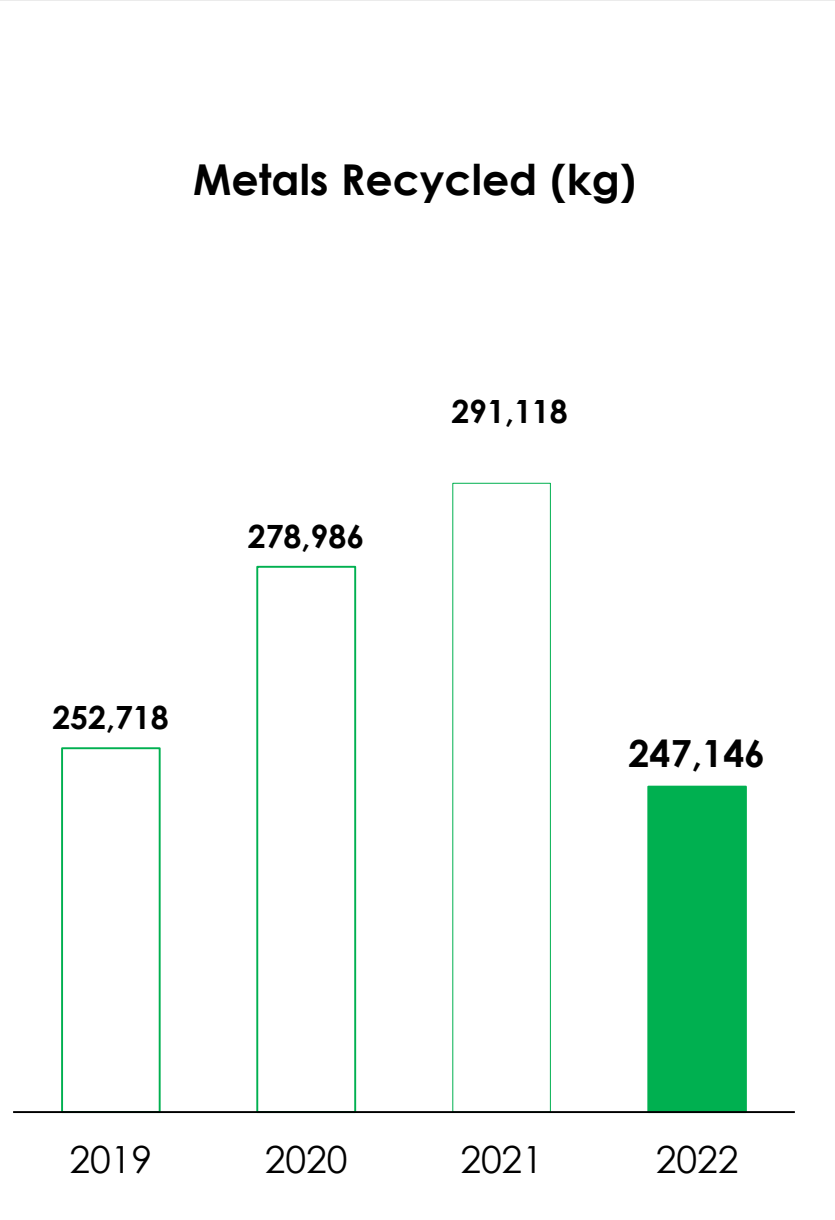


China is the largest producer of Gallium and Germanium worldwide, exporting to many countries. These rare metals are key materials for semiconductors, which are widely used in various applications

With China's export restrictions on Gallium and Germanium, global semiconductor manufacturers may face potential supply chain risks for raw materials. Therefore, the circular economy will gradually receive greater attention

Our capability for rare metal recycling can position us as a local partner for global clients. By our recycling and refining processes, we're able to mitigate the impact of supply chain uncertainties.

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

Digital transformation to deliver maximum value

Connecting Our Factories...



...To Capture the Data

One Standard



... Based Upon Lean Workflow

Transformed With Automation



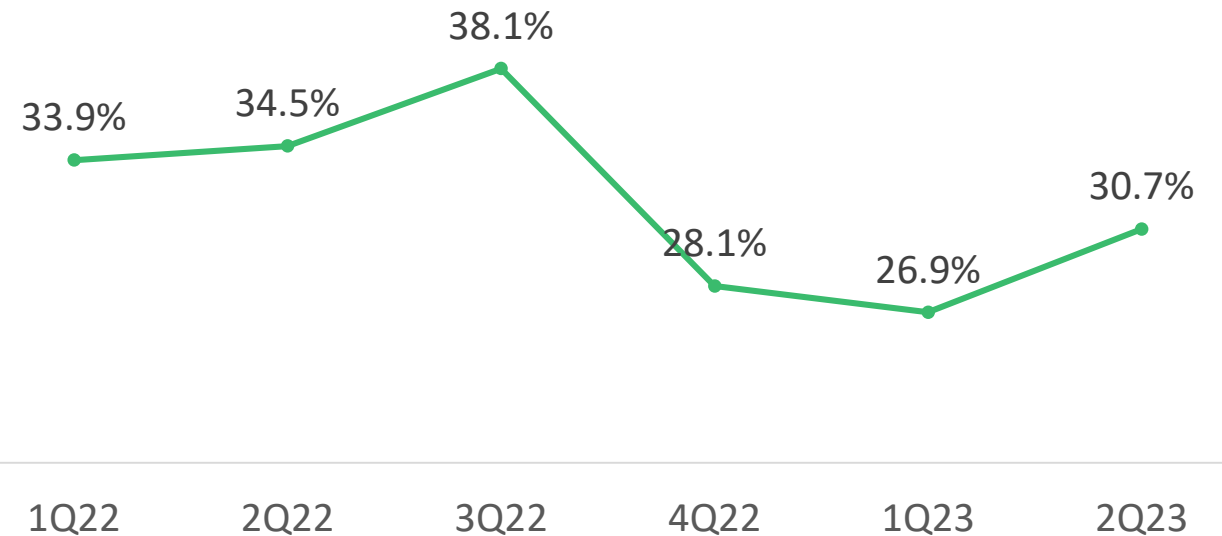
- Yield optimization
- Predictive algorithms
- Proactive maintenance work
- Real-time fault detection & resolution
- Real-time carbon footprint monitoring
- Remote problem-solving expertise

Project ONE (Operation aNd Erp)

Integration of operational processes and systems

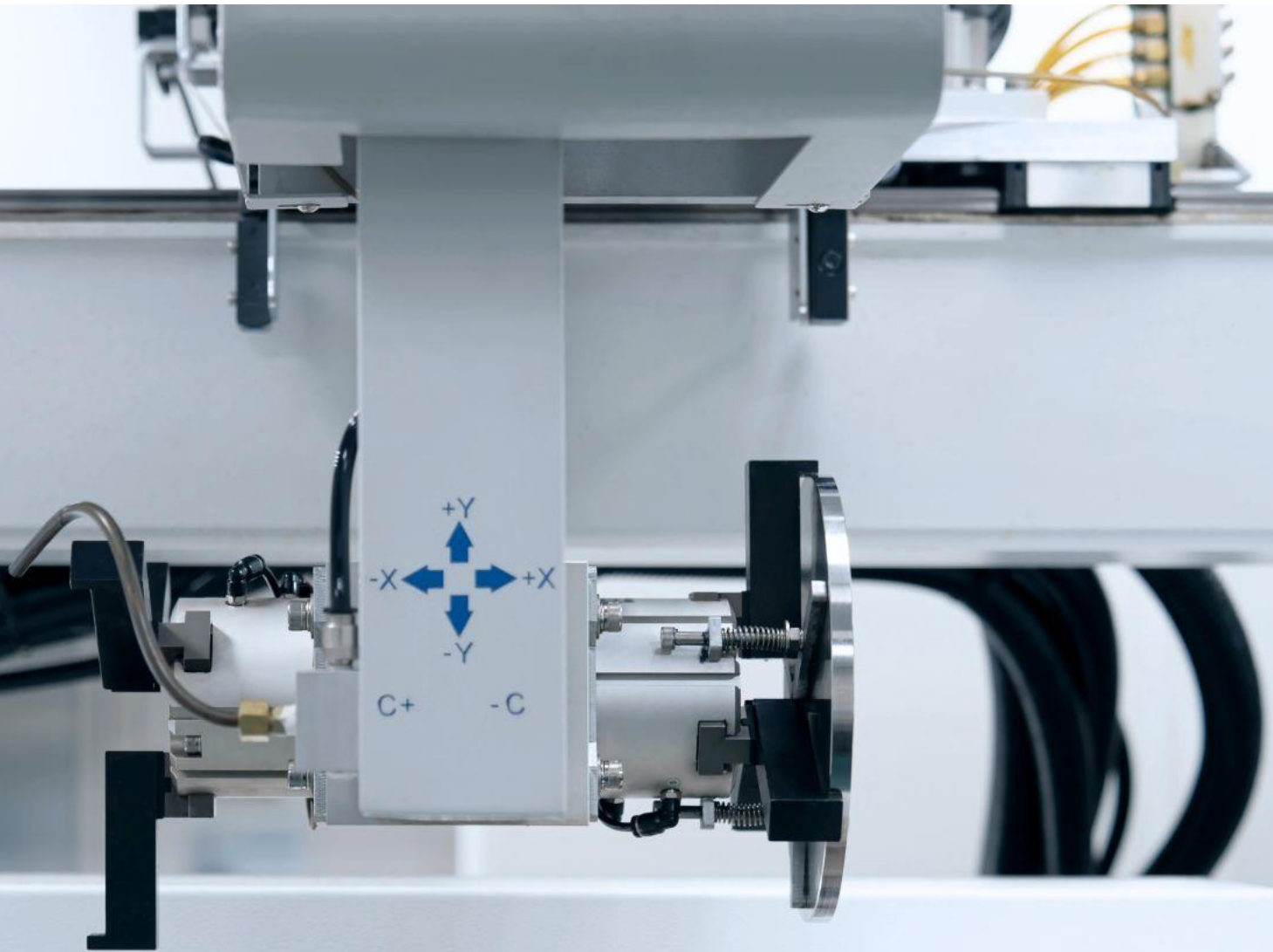
- Efficient and reliable sourcing
- Better execution
- Leaner, simpler product line-up

Operating expense/VAS



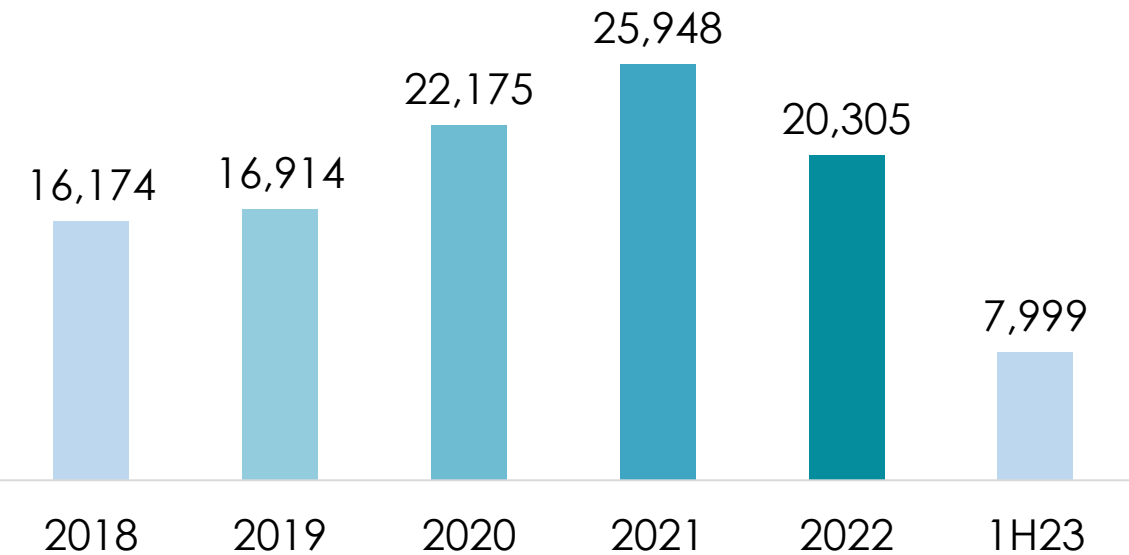
PART 3

Measurement



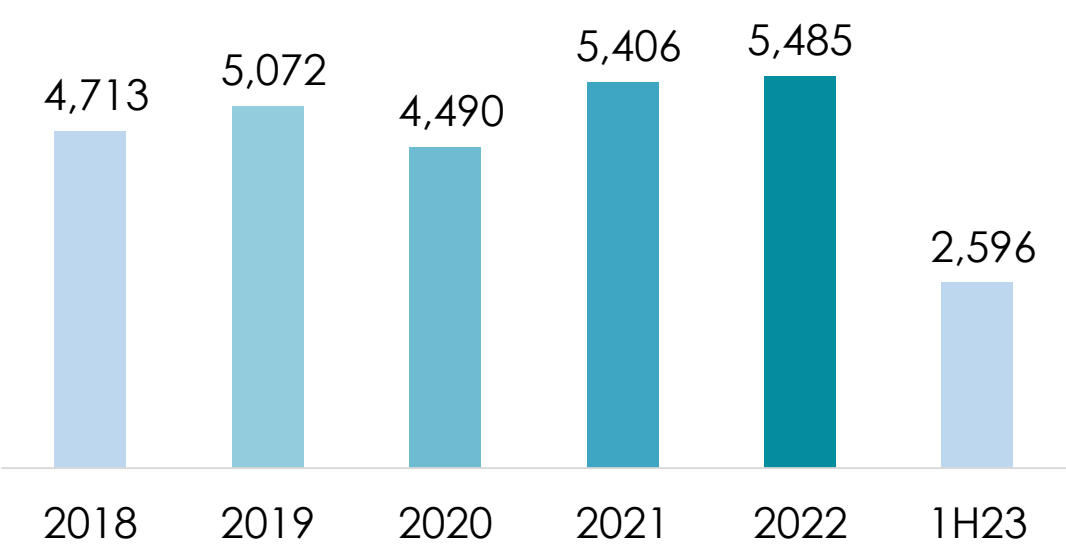
Our revenue model and trends

Precious Metals Sales (NT\$m)



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 (NT\$m)

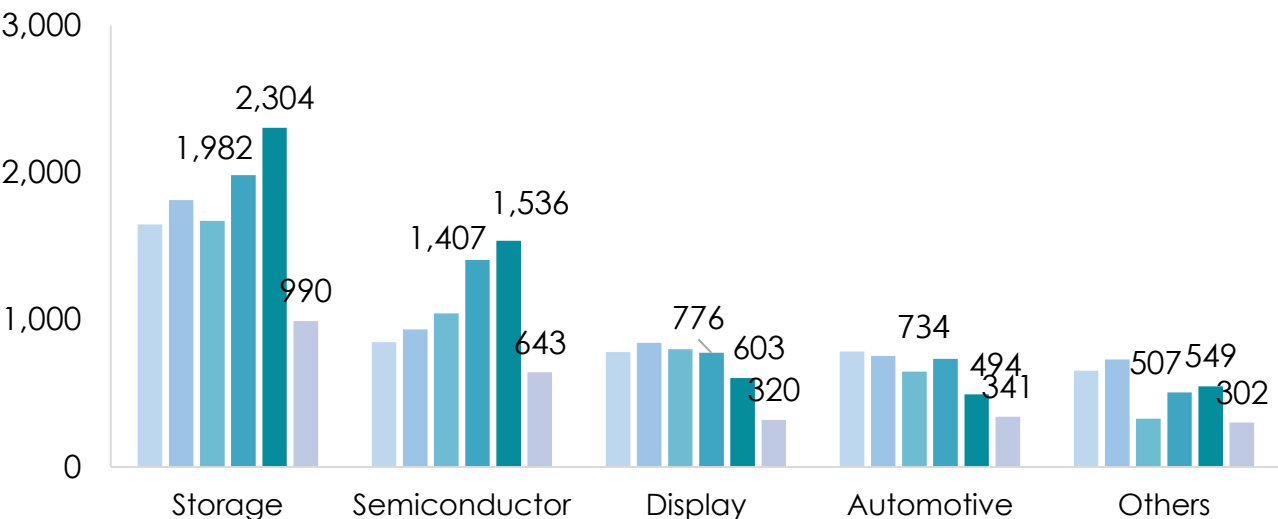


Value-added sales (VAS) reflect the true value of the products that we deliver to our customers, regardless of the precious metal prices.

Value Added Sales Break Down By Industry

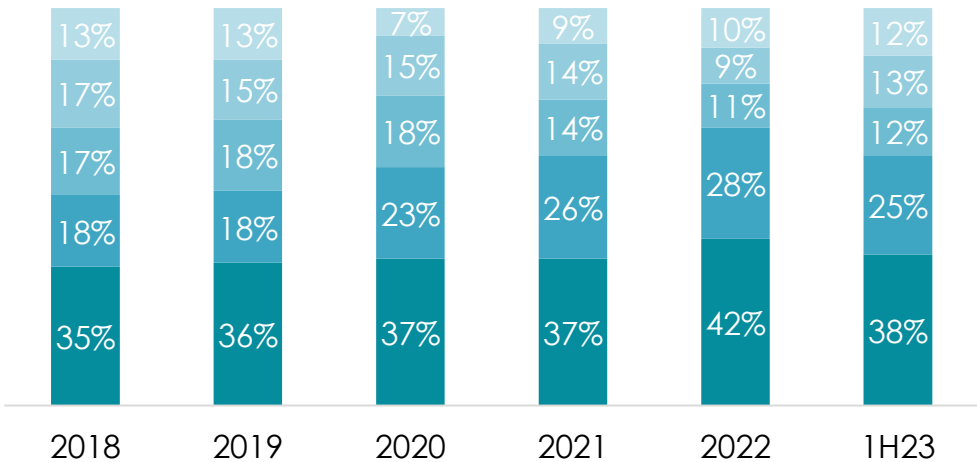
Value Added Sales – By Industry (NT\$m)

2018 2019 2020 2021 2022 1H23



Value Added Sales Breakdown – By Industry

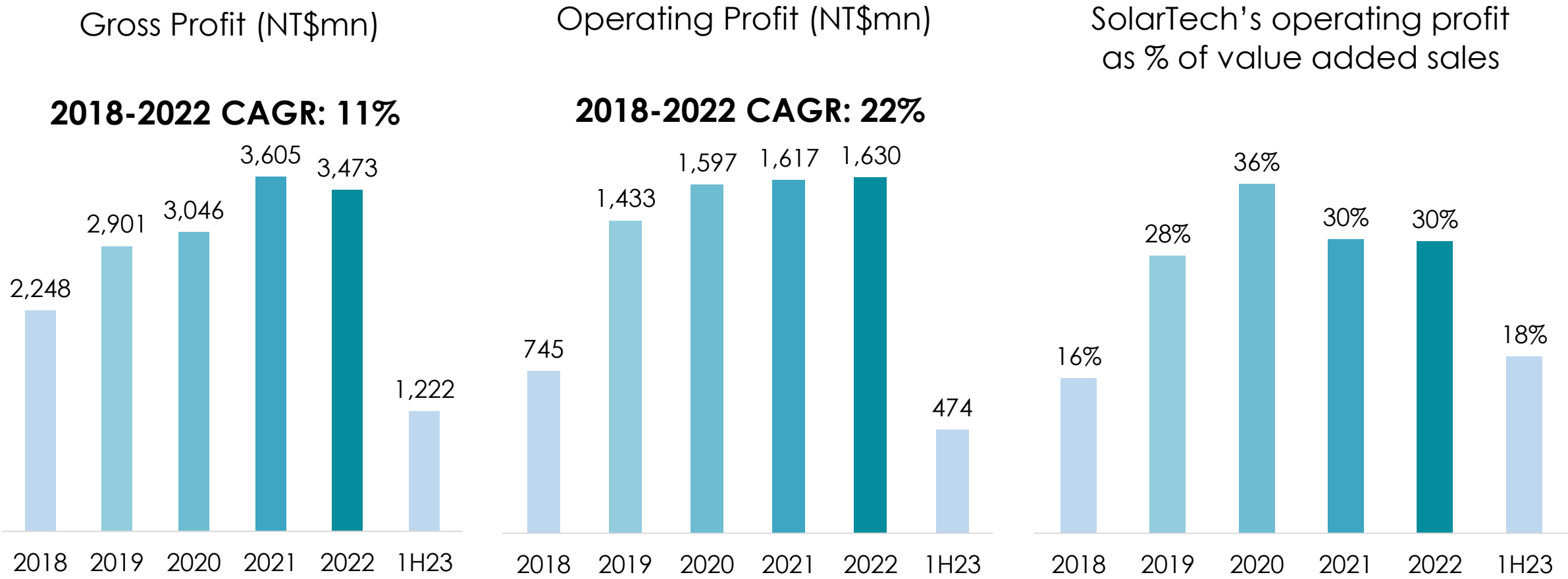
Storage Semiconductor Display Automotive Others



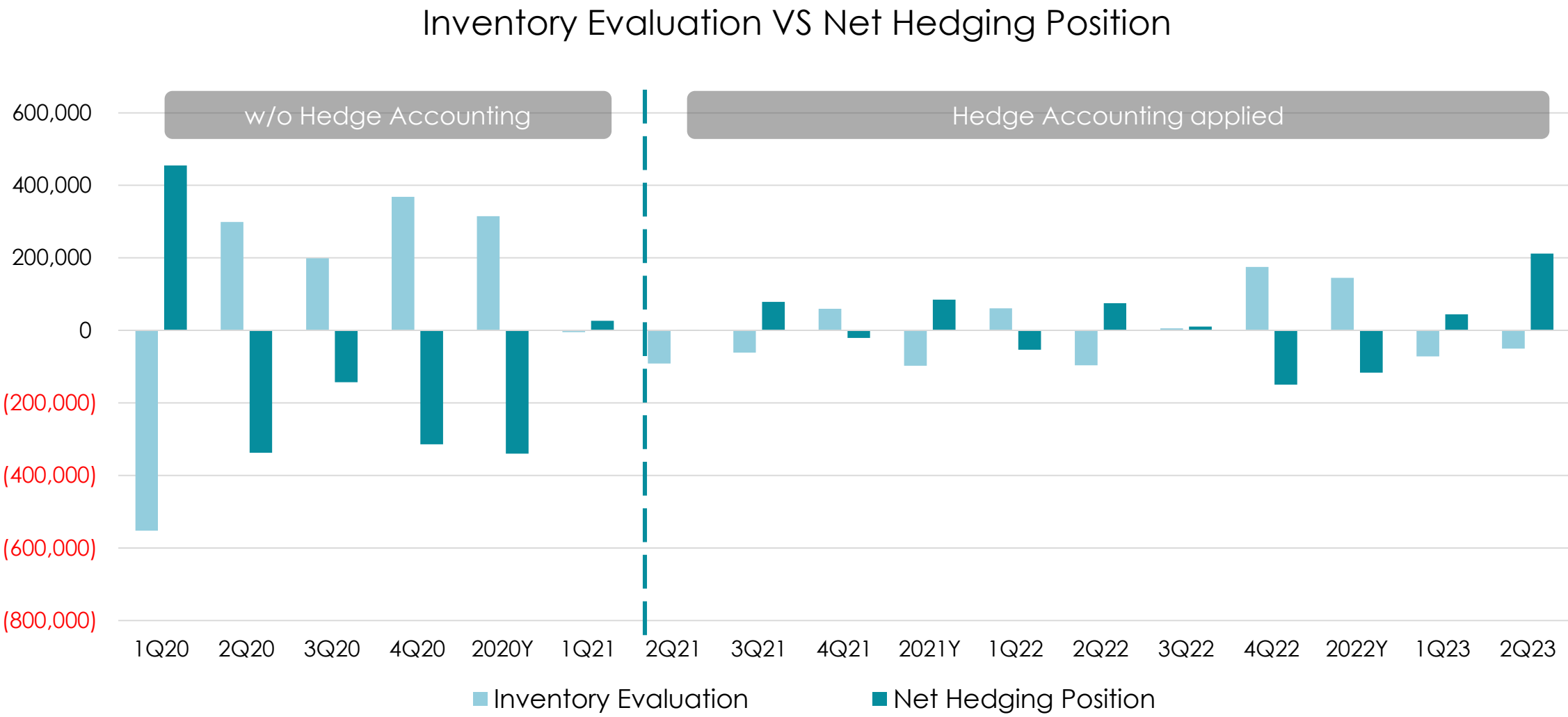
Value added sales : Our business model includes a significant amount of pass-through precious metal revenue that mask the true profitability. Value added sales shows the revenue without pass-through precious metal revenue can better present the company's actual business status to avoid being masked by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

By Industry : In the second quarter of 2023, due to conservative demand from HDD clients, the VAS revenue share of storage dropped to 33%.

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.

2Q23 Income Statement

NT\$m	2Q23	1Q23	2Q22	QoQ (%)	YoY (%)
Revenue	5,755	4,841	6,961	18.9	-17.3
Value-added Sales	1,262	1,335	1,519	-5.5	-16.9
Gross Profit	662	559	945	18.5	-29.9
Operating Expenses	388	359	525	8.0	-26.1
Operating Profit	275	200	420	37.4	-34.6
Non Operating Income/(Loss)	255	-24	44	-	480.8
Pretax Income	529	176	464	201.0	14.1
Tax Expenses	79	29	83	174.7	-5.2
Net Income to Parent	455	161	365	182.7	24.6
Basic EPS (NT\$)	\$0.77	\$0.27	\$0.62	185.2	24.2

Key Financial Ratios (%)					
Gross Margin	11.5	11.6	13.6	0.0 ppts	-2.1 ppts
VAS implied gross margin	52.5	41.9	62.2	10.6 ppts	-9.7 ppts
Operating Expense Ratio	6.7	7.4	7.5	-0.7 ppts	-0.8 ppts
Operating Margin	4.8	4.1	6.0	0.6 ppts	-1.3 ppts
VAS implied operating margin	21.8	15.0	27.6	6.8 ppts	-5.9 ppts
Effect Tax Rate	14.9	16.3	17.9	-1.4 ppts	-3.0 ppts
Net Margin	7.9	3.3	5.2	4.6 ppts	2.7 ppts

1H23 Income Statement

NT\$m	1H23	1H22	YoY (%)
Revenue	10,596	14,596	-27.4
Value-added Sales	2,598	2,885	-10.0
Gross Profit	1,222	1,950	-37.4
Operating Expenses	747	988	-24.4
Operating Profit	474	963	-50.7
Non Operating Income/(Loss)	231	-25	-
Pretax Income	705	937	-24.7
Tax Expenses	107	170	-36.9
Net Income to Parent	616	736	-16.2
Basic EPS (NT\$)	1.04	1.24	-16.1

Key Financial Ratios (%)			
Gross Margin	11.5	13.4	-1.8 pts
VAS implied gross margin	47.0	67.6	-20.6 pts
Operating Expense Ratio	7.1	6.8	0.3 pts
Operating Margin	4.5	6.6	-2.1 pts
VAS implied operating margin	18.3	33.4	-15.1 pts
Effect Tax Rate	15.2	18.2	--2.9 pts
Net Margin	5.8	5.0	0.8 pts

2Q23 Balance Sheet

NT\$m	2Q23		2Q22	
	Amount	%	Amount	%
Total Assets	25,961	100%	25,613	100%
Cash	2,379	9%	2,803	11%
AR & NR	1,877	7%	1,951	8%
Inventories	10,775	42%	9,707	38%
Fixed Assets	7,786	30%	7,691	30%
Total Liabilities	13,503	52%	13,158	51%
AP & NP	799	3%	453	2%
Total Equity	12,459	48%	12,456	49%

Key Financial Ratios		
A/R Days	29.8	26.0
Inventory Days	190.5	146.6
A/P Days	13.7	7.7
Cash Conversion Days	206.6	164.9
Debt ratio (%)	52.0	51.4

1H23 Cash Flow

NT\$m	1H23	1H22
Beginning Balance	2,207	3,149
Operating Cash Flow	379	1,048
Capital Expenditures	(525)	(680)
Investments and Others	(2)	(114)
Financing Cash Flow	396	(663)
Ending Balance	2,379	2,803

Income Statement Summary (2017 ~ 2022)

NT\$m	2017	2018	2019	2020	2021	2022
Revenue	15,754	20,887	21,987	26,665	31,355	25,791
Value-added sales	3,741	4,713	5,072	4,490	5,406	5,485
Gross Profit	1,649	2,248	2,901	3,046	3,605	3,473
Operating Expenses	1,226	1,503	1,468	1,449	1,988	1,843
Operating Profit	423	745	1,433	1,597	1,617	1,630
Non Operating Income/(Loss)	-257	-275	-185	-452	-40	39
Pretax Income	166	470	1,248	1,145	1,577	1,670
Tax Expenses	49	56	186	261	268	241
Net Income to Parent	115	389	1,039	843	1,256	1,389
Basic EPS (NT\$)	\$0.33	\$0.98	\$2.35	\$1.69	\$2.15	\$2.35

Key Financial Ratios (%)						
Gross Margin	10.5	10.8	13.2	11.4	11.5	13.5
VAS implied gross margin	44.1	47.7	57.2	67.8	66.7	63.3
Operating Expense Ratio	7.8	7.2	6.7	5.4	6.3	7.1
Operating Margin	2.7	3.6	6.5	6.0	5.2	6.3
VAS implied operating margin	11.3	15.8	28.2	35.6	29.9	29.7
Effect Tax Rate	29.5	12.0	14.9	22.8	17.0	14.4
Net Margin	0.7	1.9	4.7	3.2	4.0	5.4

YoY Growth (%)						
Revenue	-37.6	32.6	5.3	21.3	17.6	-17.7
Gross Profit	134.8	36.3	29.0	5.0	18.4	-3.7
Operating Profit	-	75.8	92.4	11.5	1.3	0.8
Net Income to Parent	-	239.1	167.1	-18.8	48.9	10.6
Basic EPS	-	197.0	139.8	-28.1	27.2	9.3

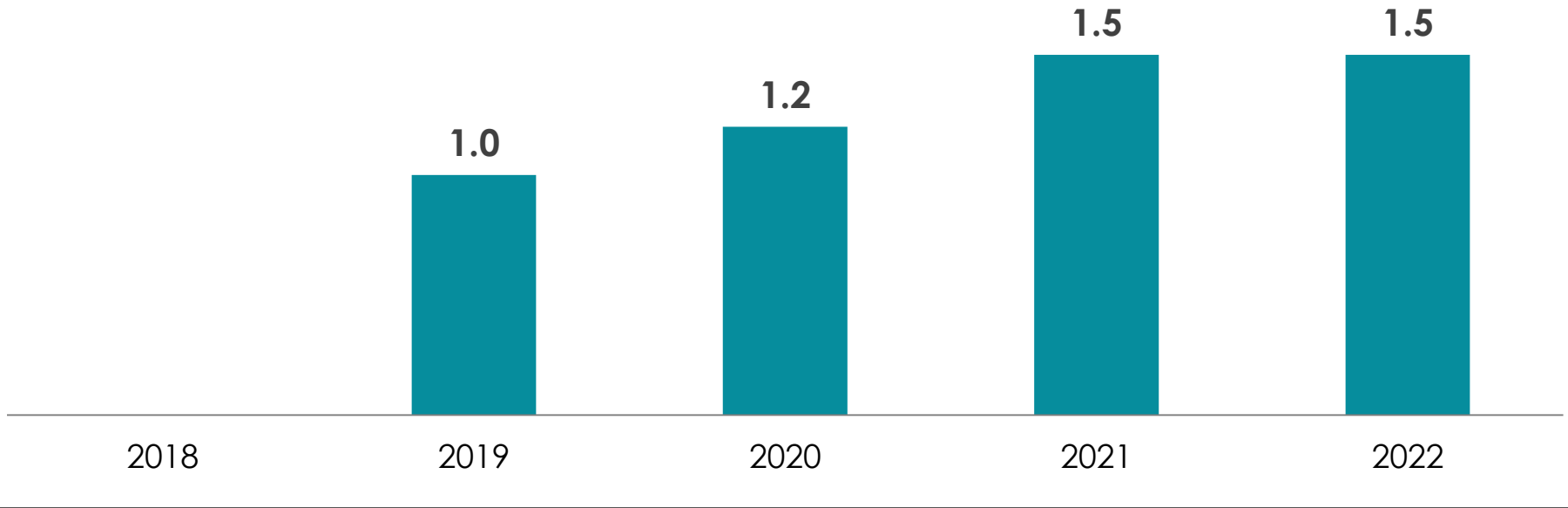
Balance Sheet Summary (2017 ~ 2022)

NT\$mn	2017	2018	2019	2020	2021	2022
Total Assets	19,055	19,832	21,274	21,259	25,422	26,601
Cash	714	795	590	2,161	3,149	2,207
AR & NR	1,615	1,465	1,594	1,820	2,099	1,729
Inventories	5,484	6,927	7,407	7,893	9,474	11,434
Fixed Assets	7,079	6,384	7,031	6,877	7,321	8,308
Total Liabilities	14,471	14,662	13,275	12,752	12,984	13,397
AP & NP	826	285	352	230	623	1,084
Total Equity	4,584	5,170	7,999	8,506	12,438	13,203

YoY Growth (%)						
Total Assets	-0.9	4.1	7.3	-0.1	19.6	4.6
Cash	151.1	11.3	-25.8	266.6	45.7	-29.9
AR & NR	-6.3	-9.3	8.8	14.1	15.4	-17.6
Inventories	10.0	26.3	6.9	6.6	20.0	20.7
Fixed Assets	-12.1	-9.8	10.1	-2.2	6.4	13.5
Total Liabilities	-5.0	1.3	-9.5	-3.9	1.8	3.2
AP & NP	-10.6	-65.5	23.5	-34.6	171.1	73.9
Total Equity	14.7	12.8	54.7	6.3	46.2	6.2

Key Financial Ratios						
A/R Days	38.7	26.9	25.4	23.4	22.8	27.1
Inventory Days	135.5	121.5	137.1	118.2	114.2	171.0
A/P Days	22.6	10.9	6.1	4.5	5.6	14.0
Cash Conversion Days	151.5	137.6	156.4	137.1	131.4	184.1
ROE (%)	2.8	8.3	16.2	10.5	12.4	11.2
ROA (%)	1.6	3.4	6.4	4.9	6.2	6.2
Debt ratio (%)	75.9	73.9	62.4	60.0	51.1	50.4

Dividend Payout and Capex (2018 ~ 2022)



Payout Ratio (%)	-	48%	84%	71%	64%
Dividend Yield* (%)	-	2.4%	2.5%	3.8%	3.9%
Capex (NT\$ mn)	266	991	352	706	1,374
Capex to Sales (%)	1.3%	4.5%	1.3%	2.3%	5.3%

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



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