



Solus Advanced Materials Co., Ltd.
2021 4Q EARNINGS REPORT

February 2022

Disclaimers

The information herein is provided for your information purposes only and contains preliminary figures which may be materially different from the final figures.

Forecasts and projections contained in this material are based on current business environments and management strategies, and they may differ from the actual results upon changes and unaccounted variables. We make no guarantees and assume no responsibility for the use of information provided.

We trust your decisions will be based on your own independent judgment.

Financial data in this presentation is based on an IFRS-basis consolidated financial statements.

I. 2021 4Q & Full-year Earnings

II. Consolidated Financial Statements

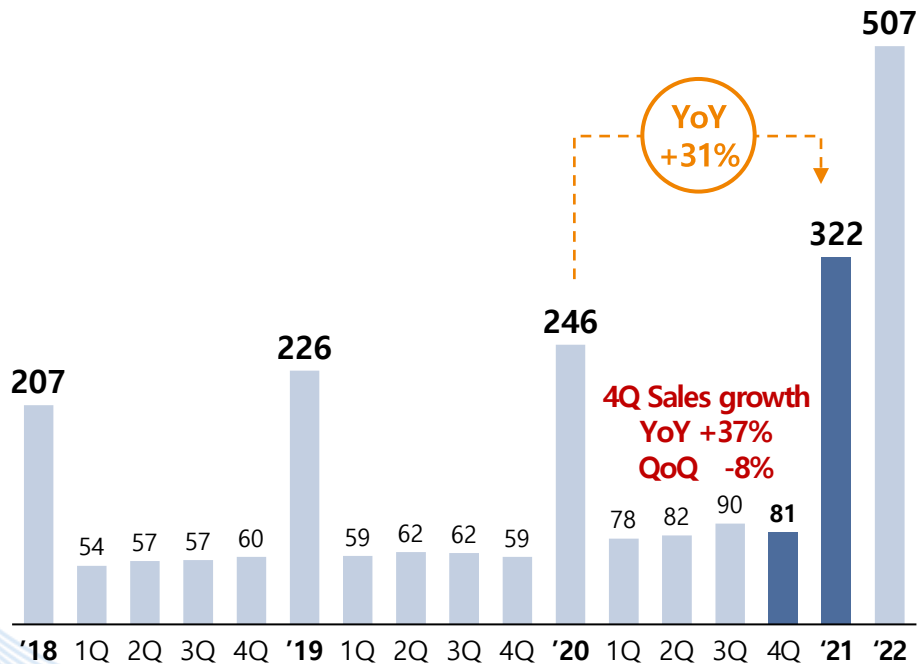
III. Appendix

2021 4Q & Full-Year Earnings

- **FY2021 Earnings:** Achieved the largest revenue in all divisions since Solus foundation. (Expanding sales volume of battery copper foil Div., stable growth of copper foil Div., OLED portfolio expansion and customer diversification, optimization of BIO portfolio) Mass production of battery copper foil had caused expenses which were reflected in FY2021 earnings.
- **FY2021 4Q:** Sales decreased due to temporary reduction in battery copper foil supply, adjusted the supply via copper foil customers' stock management and 3Q pre-supply of biomaterials. Stable mass production set-up incurred expenses and electricity prices went up as global power supply failed to match demand.

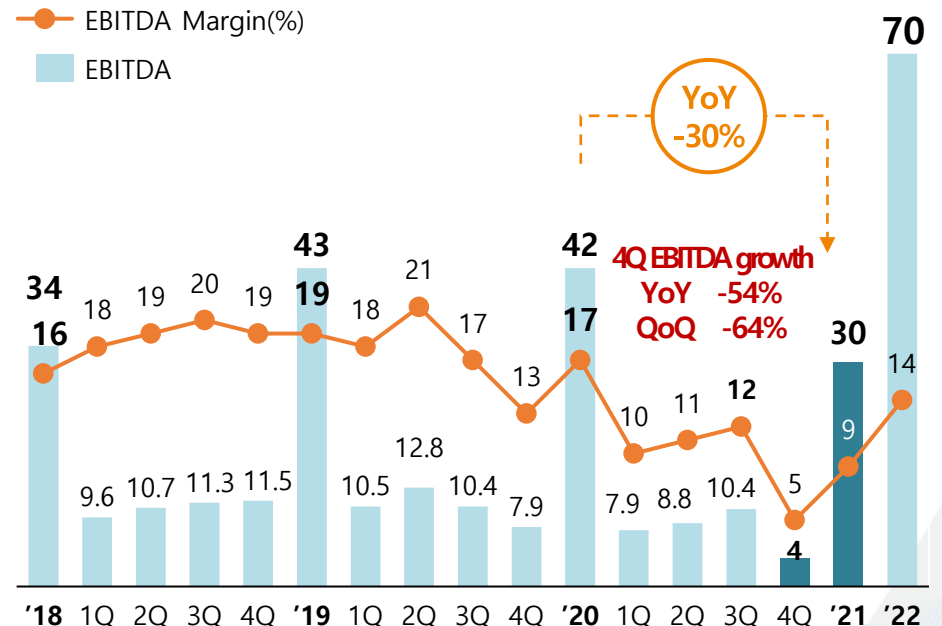
[Revenue Trend]

USD 1M



[EBITDA (%) Trend]

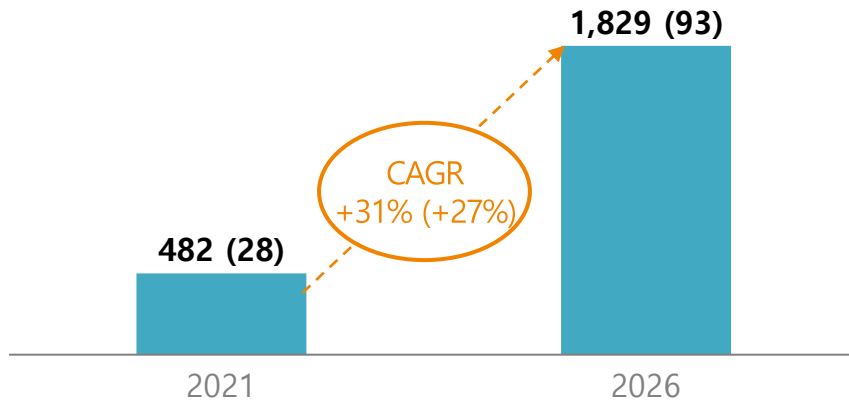
USD 1M, %



Battery Copper Foil Div. (Battery Copper Foil & Copper Foil) 2021 4Q Achievements & Plan

Market Outlook for Battery Copper Foil

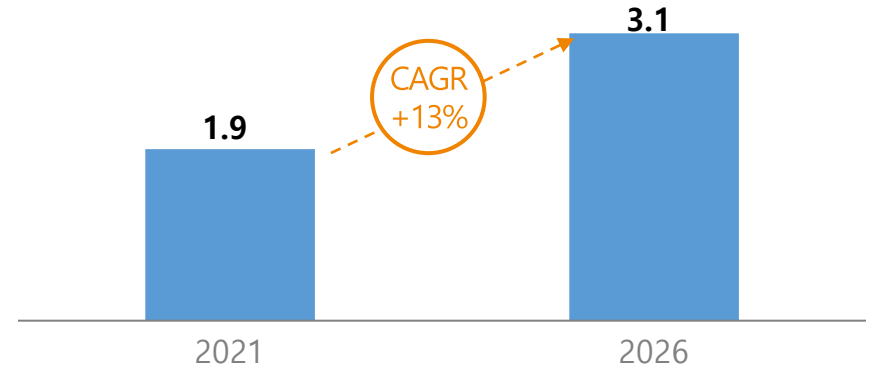
GWh (10K ton)/yr.



※ Source: IHS Markit & Company data

Market Outlook for High-end Copper foil for 5G/Semiconductors

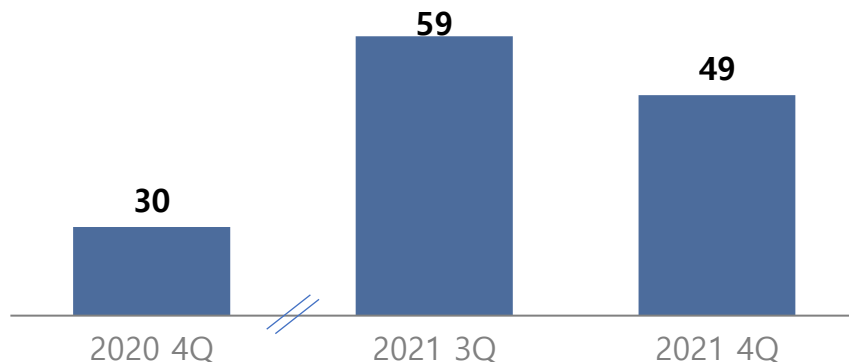
(10K ton)/yr.



※ Source: Prismark Report_IDTechEx 5G Technology Marketand

Revenue of Battery Copper Foil Div. (Battery copper foil + Copper foil)

USD 1M



4Q 2021 Achievements & 2022 Plan

- **Achievements: Increased by 64% (YoY), Decreased by 15% (QoQ)**
 - Battery copper foil: Signed a new supply contract with a global company in November.
 - Copper foil: Ultra-thin materials for semiconductors were approved by SK Hynix in November. Copper foil capacity for 5G expanded.
- **Plan: Response to increasing demand & customer diversification**
 - Battery copper foil: Supply volume will increase, and new/additional supply agreements will be made in 1H 2022.
 - Copper foil: Supply expansion/quality approval for Low Loss product will be expected based on the growing copper foil market in high-end 5G/semiconductors.

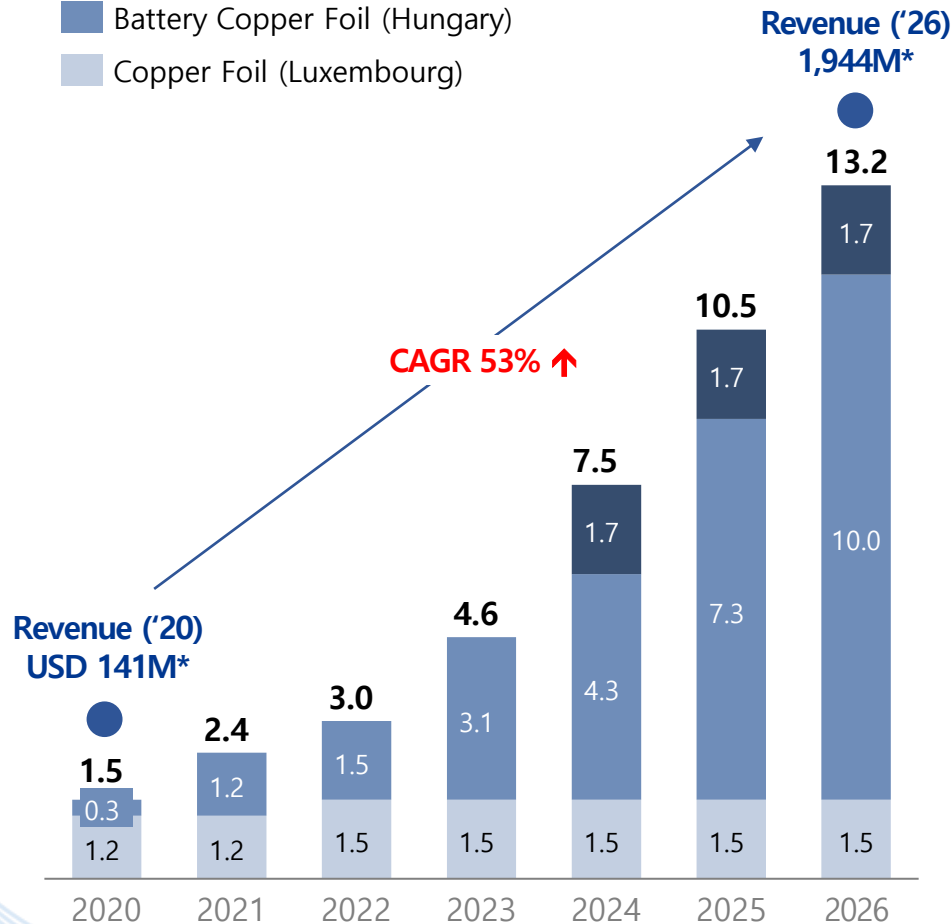
Battery Copper Foil Div.

Mid-to Long-term Plans for Production & Plant Expansion

Investor Relations 2021

10K ton/yr.

- Battery Copper Foil (Canada)
- Battery Copper Foil (Hungary)
- Copper Foil (Luxembourg)



Battery Copper Foil Plant Expansion Plans (Hungary & Canada)

- **Hungary (Targeting Europe): A Total of 100K tons**
 - Phase 1 (15K tons): First shipment in November 2020
 - Phase 2 (23K tons): Plans to mass-produce in the 2H of 2022
 - Phase 3 (62K tons)
 - Phase 3-1 (33K tons): Plans to mass-produce in the 2H of 2024
 - Phase 3-2 (29K tons): Plans to mass-produce in the 2H of 2025
- **Canada (Targeting North America): Phase 1 (17K tons)**
 - Completed site purchase with an annual production capacity of 60K tons in Quebec, Canada
 - Purchased a plant as well equipped with copper foil infrastructure and renovations will be launched (construction scheduled for the 2H of 2022)
 - Phase 1 (17K tons): Plan to mass-produce in the 2H of 2024

Copper Foil Plant Expansion Status & Plans (Luxembourg)

- **Copper Foil (for 5G/Semiconductors) plant's production capacity has expanded**
 - Capacity: Total 15K tons (3K ton capacity had increased at the end of 2021)
 - Plans to respond to supply increase both in High-end copper foil (for 5G) & Ultra-thin copper foil (for semiconductors)

※ Based on year-end gross capacity
 ※ The average monthly exchange rate of 4Q, '21

Battery Copper Foil Div. Plant Expansion in Canada

Market Entry Process

- The battery copper foil market in North America is expected to make a rapid annual growth (approx. 28%, source: HIS Market) from 2021 to 2030.
- The market is expanding around JV between OEMs and top-tier battery manufacturers.
- **The battery copper foil plant was established according to the demands in the North American market** as battery manufacturers have made aggressive investments in the region.

Reasons for Choosing Quebec, Canada

- Because there was a CFL subsidiary in Canada in the past, **it is possible to enter the market much quickly** by renovating the existing plant with production infrastructure for copper foil.
 - Using the existing factory instead of building a new one is effective as maintenance/investment costs and licensing periods will be reduced.
- Quebec has lower and more stable electricity cost and is eco-friendly in terms of ESG than other North American regions.
 - More than 99% is hydroelectric power, resulting in **low and stable electricity costs in North America.**
As new renewable energy, it can respond to eco-friendly policies such as RE100
- According to the “Certification of Origin” provisions in North America, no customs applied when exporting battery copper foil to America.
 - **No customs applied among 3 North American nations. Corresponds to the electric vehicle subsidy policy provided when production is higher than 75% in the region.**
- **Various investment incentives** offer financial support for investment expenses.

Milestones & Investments

- **Solus plans is planning to invest approx. \$350M for mass-production in the 2H of 2024, achieve production capacity of 17K tons in North America**
 - Construction to start in 2022 and mass-production by the 2H of 2024.
 - Investments: Approx. \$350M by 2024 (Plant site purchased in Nov 2021).
 - With the aim of gross capacity of 17K tons, additional expansion will be considered according to market/customer conditions.

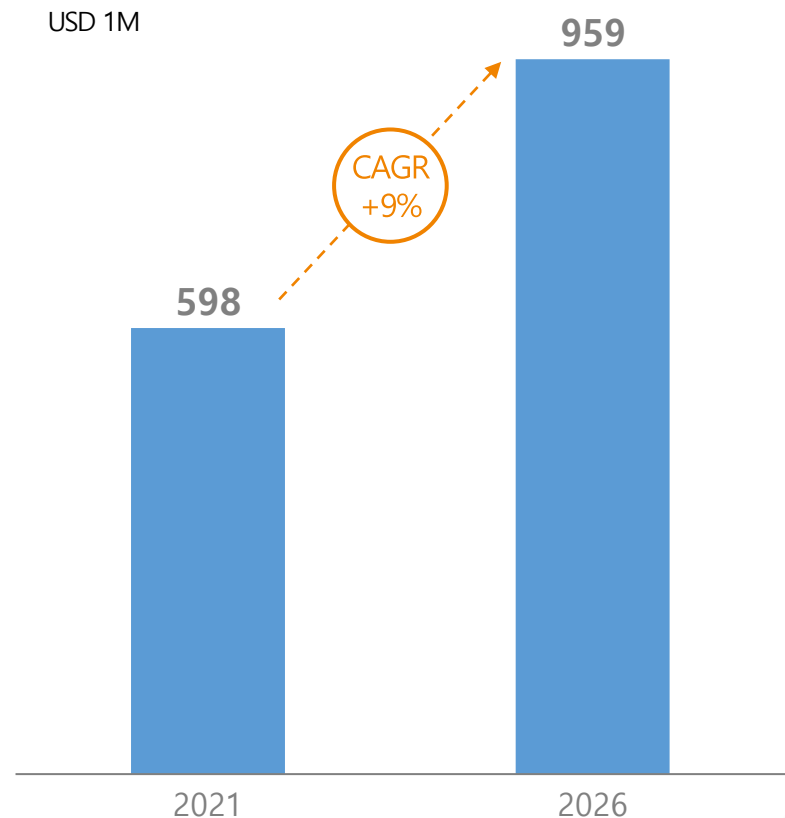


Production plant in Quebec, Canada

Battery Copper Foil Div. Entry into Ultra-thin Copper Foil Market

Market Outlook for W/W Ultra-thin Copper Foil

- The global market scale for ultra-thin copper foil is expected to be around 959M USD in 2026 (memory, HDI (SLP), SiP (System in Package), 5G Chipset, CPU/AP, etc.)
- Solus' ultra-thin copper has been officially approved for the first time in the domestic copper foil industry that **it can be applied to MSAP (Modified Semi-Additive Process)**, the next-generation micro-circuit manufacturing method.
- **Miniaturization of circuit lines** led to the development of ideal copper foil properties for MSAP that realize **compactness, integrity and high performance of semiconductors**.
- **Product Application and Quality Approval**
 - **Adopted in next-generation wearable devices** by domestic manufacturers in Oct 2020.
 - . Received an order for high-end 2μm ultra-thin copper foil for the first time in Korea, which had been monopolized by Japanese manufacturers.
 - **Received SK Hynix's final approval to produce ultra-thin copper foil for semiconductors**
 - . Including reliability test, Solus passed all tests required for material approval in just a year and a half, which usually takes 2 years.
 - . Expected to make sales at the beginning of 2023.



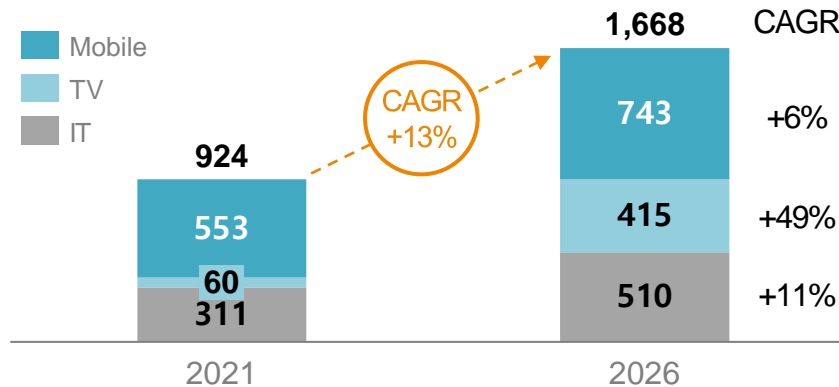
Sources: PRISMAR '19 report & Company internal data

※ The average monthly exchange rate of 4Q, '21

Advanced Materials Div. (OLED & Bio) 2021 4Q Achievements & Plan

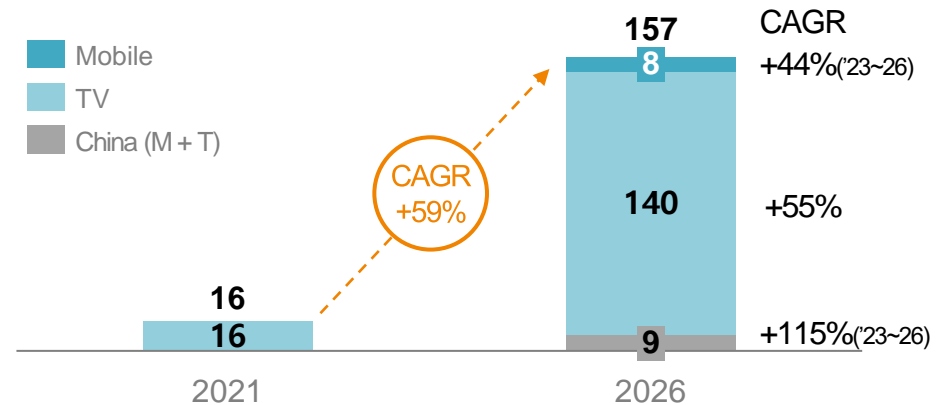
Market Outlook for OLED Display (EML Materials)

USD 1M



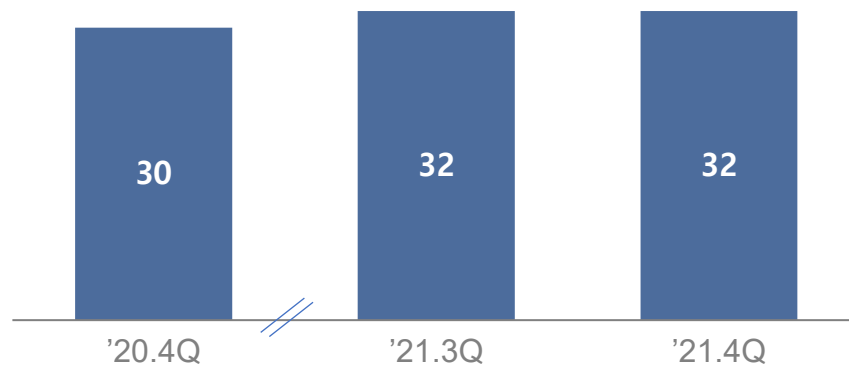
Market Outlook for OLED Display Materials (Non-EML Materials)

USD 1M



Advanced Materials (OLED & Bio) Revenue

USD 1M



※ Based on revenues of Advanced Materials Div., sales of OLED account for 60~70%

2021 4Q Achievements & Plan

- **Achievements: Increased by 9% (YoY) and by 3% (QoQ)**
 - OLED: Customer diversification and product portfolio expansion with LGD HTL, QD display fillers, etc.
 - Bio: Mid to long-term Ceramide supply agreement with a major global company in October.
- **Plan: Expand overseas customers and sign supply agreements**
 - OLED: Plant in China(Changshu) has been set up with mass production systems. (Scheduled to mass-produce in 2H 2022)
 - Bio: Ceramide supply agreements with a global major cosmetics company will be made in 1H 2022.

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Consolidated Financial Statements

Investor Relations 2021

USD 1M									
Items	'19. 12	'20. 03	'20. 06	'20. 09	'20. 12	'21. 03	'21. 06	'21. 09	'21. 12
Current Asset	199	161	151	158	414	335	331	316	332
Non-current Asset	228	265	292	305	359	380	441	480	520
Total Asset	427	425	443	464	773	715	772	796	852
Current Liabilities	159	138	135	120	154	162	211	237	241
Non-current Liabilities	146	162	178	212	169	110	113	113	171
Total Liabilities	305	300	313	331	323	272	324	350	412
Capital Stock	3	3	3	3	4	4	4	3	3
Total Equity	121	125	130	132	450	443	448	446	440
Debt-to-Equity Ratio	251%	240%	241%	250%	72%	61%	72%	79%	94%
[Loan Payable]									
Loans Payable	159	173	207	218	228	139	180	208	253
Cash	82	45	55	45	281	178	166	141	118
Net Debt	77	128	151	173	-53	-39	14	67	135

※ The above data for 2021 4Q is based on unaudited financial statements.

※ The exchange rate is based on the quarter-end exchange rate.

Consolidated Statements of Comprehensive Income

Investor Relations 2021

USD 1M

Items	'19	'20					'21				
		1Q	2Q	3Q	4Q	계	1Q	2Q	3Q	4Q	계
Revenue	60	59	62	62	59	246	80	82	90	81	322
COGS	40	40	40	41	41	164	63	66	71	65	256
Gross Profit	20	20	22	20	18	82	16	16	19	16	66
SG&A	11	12	13	14	16	56	16	14	16	20	64
EBIT	9	7	9	6	2	26	0.4	2	3	-4	2
(%)	15%	13%	15%	10%	15%	10%	0.5%	2.3%	3.6%	-4.4%	0.5%
Gain/Loss on Interest	-1	-1	-1	-1	-2	-5	-2	-1	-1	-0.3	-4
Gain/Loss on foreign currency transaction	-1	1	0.2	-1	-6	-6	5	2	0.7	-0.2	7
Gain/Loss on foreign currency translation	-2	1	-3	-4	-8	-14	2	-2	2	-0.2	1
Earnings before Interest and Taxes	6	7	6	-1	-15	-2	3	-0.3	2	-4.4	0.5
Income Taxes	2	3	1	1	2	7	4	-3	2	-2.5	0.4
Net Income	4	5	5	-2	-17	-9	-1	3	0.6	-2	0.1
Income for controlling shareholder	4	5	5	-2	-17	-9	2	5	2	1	10

※ The above data for 2021 4Q is based on unaudited financial statements.

※ The exchange rate is based on the average exchange rate

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Company & Business Introduction

Company Introduction

<u>Company Name</u>	Solus Advanced Materials Co., Ltd.
<u>CEO</u>	Daeje Chin & Kwangpyuk Suh
<u>Established</u>	2019. 10. 01
<u>Listed</u>	2019. 10. 18 (KOSPI)
<u>Total Assets</u>	USD 852M* (As of end of Dec '21)
<u>Employees</u>	1,054 (As of end of Dec '21)
<u>Based</u>	627 Seodong-ro, Iksan-si, Jeollabuk-do
- <u>Battery Copper Foil</u>	Hungary, Canada (R&D/Production/Sales)
- <u>Copper Foil</u>	Luxembourg (R&D/Production/Sales)
- <u>OLED, Bio</u>	Yongin (R&D/Sales), Iksan (Production), China (R&D/Sales)

Business Introduction

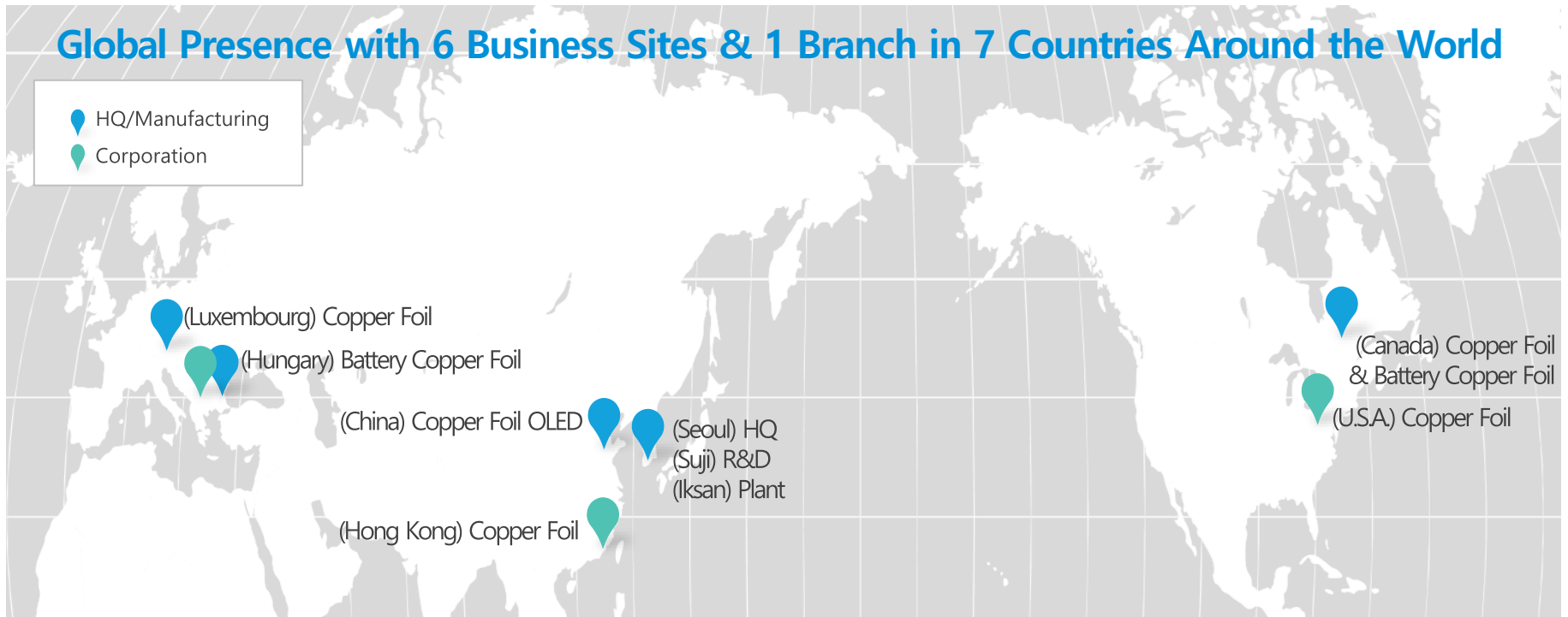
 Battery Copper Foil	Battery Copper Foil Copper foil for EV batteries	
	Copper Foil Copper foil for 5G Networks & electronic devices (PCB)	
 Advanced Materials Division	OLED OLED and display materials for smartphone, TV, laptop, etc.	
	Bio Natural-based materials for cosmeceutical, pharmaceutical and nutraceutical	

※ The above data for 'Total Assets' (as of end of Dec '21) is based on unaudited financial statements.

Business Sites

Global Presence with 6 Business Sites & 1 Branch in 7 Countries Around the World

- HQ/Manufacturing
- Corporation



South Korea (OLED & Bio)



Hungary (Battery Copper Foil)



Luxembourg (Copper Foil)

Domestic & Overseas Corporations

Solus Advanced Materials Co., Ltd.

Volta Energy Solutions S.a.l. (LUX)

Copper Foil

Circuit Foil Luxembourg
(Luxembourg)

CFT* (U.S.A.)

CFAPZH* (China)

CFAPHK* (Hong Kong)

Canada Branch

Battery Copper Foil

Volta Energy Solutions
Europe Kft. (Hungary)

Volta Energy Solutions
Hungary Kft. (Hungary)

Volta Energy Solutions
Canada Inc. (Canada)

OLED

- R&D (Suji)
- Manufacturing & Production (Iksan)
- Manufacturing & Production (China)**

Bio

Solus Biotech Co., Ltd.
(Korea)

* CFT(Circuit Foil Trading Inc.) / CFAPZH(Circuit Foil Asia Pacific Zhangjiagang) / CFAPHK(Circuit Foil Asia Pacific Hong Kong)

** Solus Advanced Materials (Changshu) Co., Ltd

FX Rate

Items	'18.1Q	'18.2Q	'18.3Q	'18.4Q	'19.1Q	'19.2Q	'19.3Q	'19.4Q
B/S	1,066.50	1,121.70	1,112.70	1,118.10	1,137.80	1,156.80	1,201.30	1,157.80
I/S	1,072.27	1,075.37	1,090.78	1,100.19	1,124.97	1,145.78	1,161.94	1,165.46

Items	'20.1Q	'20.2Q	'20.3Q	'20.4Q	'21.1Q	'21.2Q	'21.3Q	'21.4Q	2021(P)~ 2025(P)
B/S	1,222.60	1,200.70	1,173.50	1,088.00	1,133.50	1,130.00	1,184.90	1,185.50	1,100.00
I/S	1,193.03	1,206.70	1,200.52	1,179.96	1,113.62	1,121.33	1,157.95	1,183.14	1,100.00

- Source : First notified basic exchange rate from Hana Bank
- Source : Internal materials for projections

Solus Advanced Materials Co., Ltd.
www.solusadvancedmaterials.com