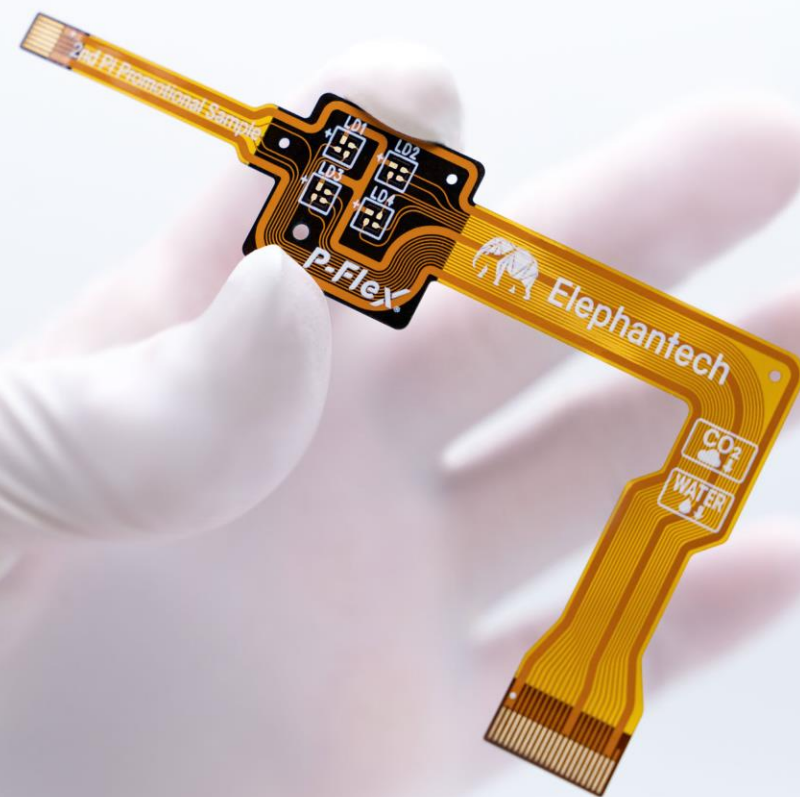


Company introduction

Shinya Shimizu, the founder and CEO, Elephantech
October 2024



Company overview

Company

Representative:	Shinya Shimizu
Founded:	January 2014
Employees:	130 full-time (May 2024)
Website:	www.elephantech.co.jp/en/
Certification:	ISO 9001:2015, ISO 14001:2015
Business:	Sales & Manufacturing of PCB Machinery & Material development
Equity raised:	9.5 bn JPY

Location



Headquarters (Tokyo)

Office / prototype manufacturing
4-3-8 Hatchobori, Chuo, Tokyo 104-0032, Japan



R&D center (Tokyo)

R&D of materials and inkjet printing system
1-3-14 Shinkiba, Koto, Tokyo 136-0082, Japan

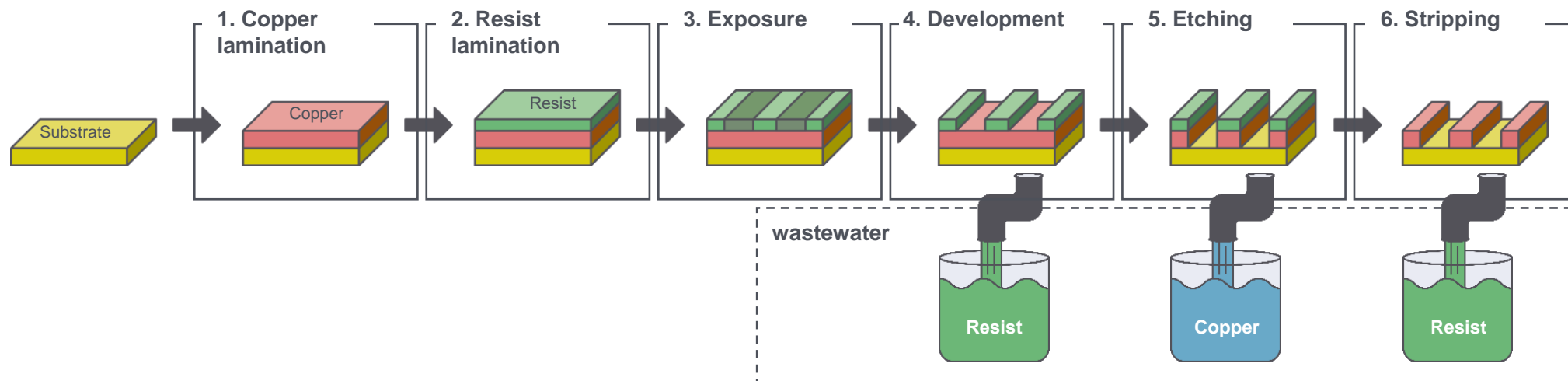


AMC Nagoya (Aichi)

Mass production plant
2-1 Tango-dori, Minami, Nagoya, Aichi 457-0801, Japan
(Located in Mitsui Chemicals Inc. Nagoya Works)

The PCB manufacturing has been wasteful and inefficient

Subtractive method: a Wasteful standard of printed circuit boards production



1. Greenhouse Gas Emissions



66M t-CO₂eq, **0.13%** of global emissions¹

2x bigger than the semiconductor foundry²

10% of emissions from Apple's manufacturing³

\$4.4B of potential carbon costs⁴

2. Wastewater Pollution



4M m³ of wastewater generated⁵

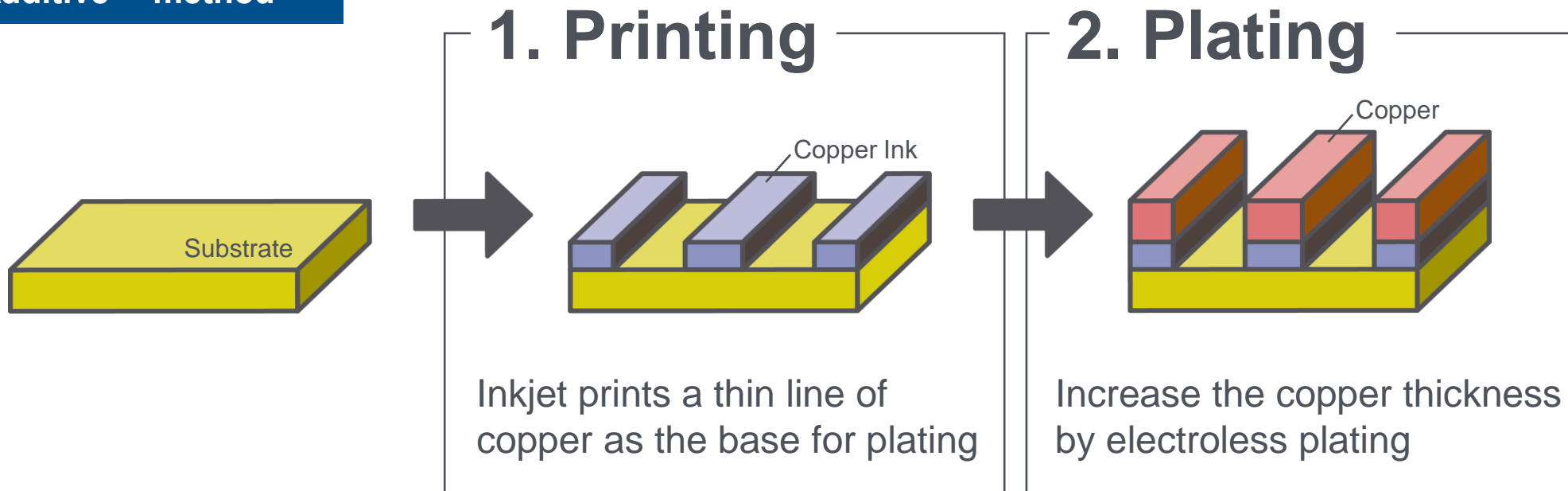
140,000 tons of copper contained

10~15 wt% of copper concentration

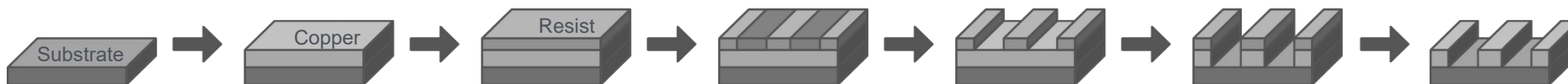
High concentration of hydrochloric acid

— Pure Additive™ method maximizes the material efficiency

Pure Additive™ method



Subtractive method

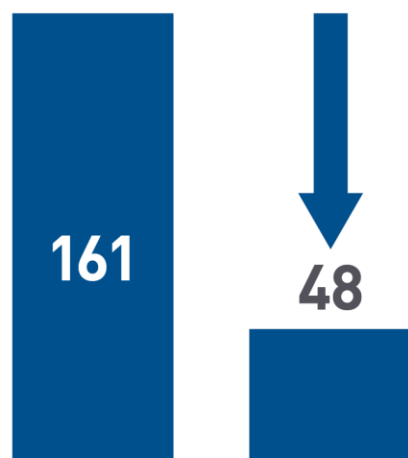


Truly, a game-changer

Copper usage ¹

-70%

[g/m²]

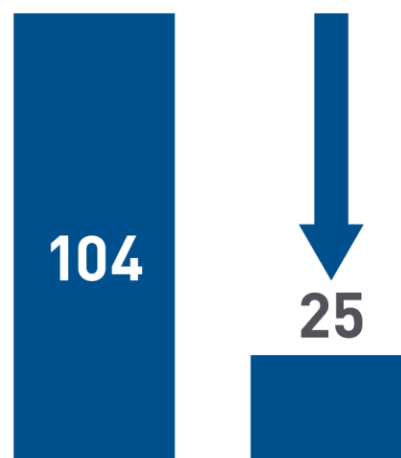


Reference Elephantech

Carbon footprint ²

-75%

[kg-CO₂eq /m²]

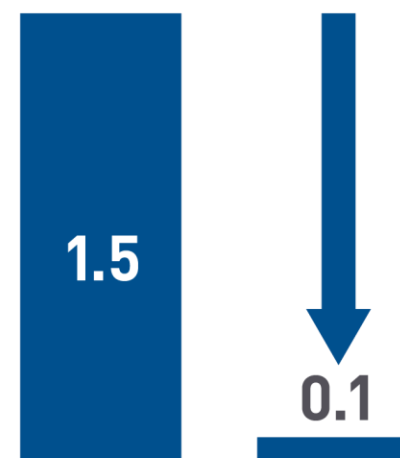


Reference Elephantech

Water usage ²

-95%

[m³/m²]



Reference Elephantech

Manufacturing costs

**COST
REDUCTION**

[USD /m²]



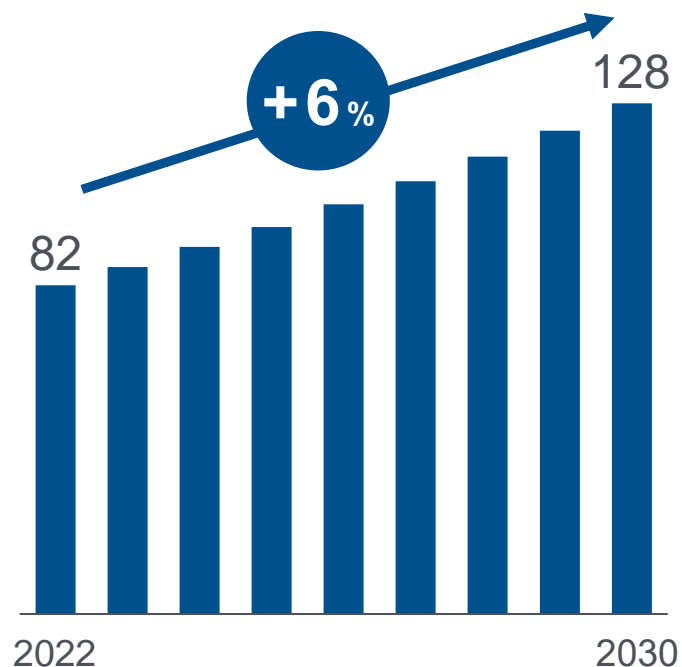
Reference Elephantech

Why PCB market?: big, growing, and monopolistic market

Big, growing market

Growing \$100B market led by global electrification

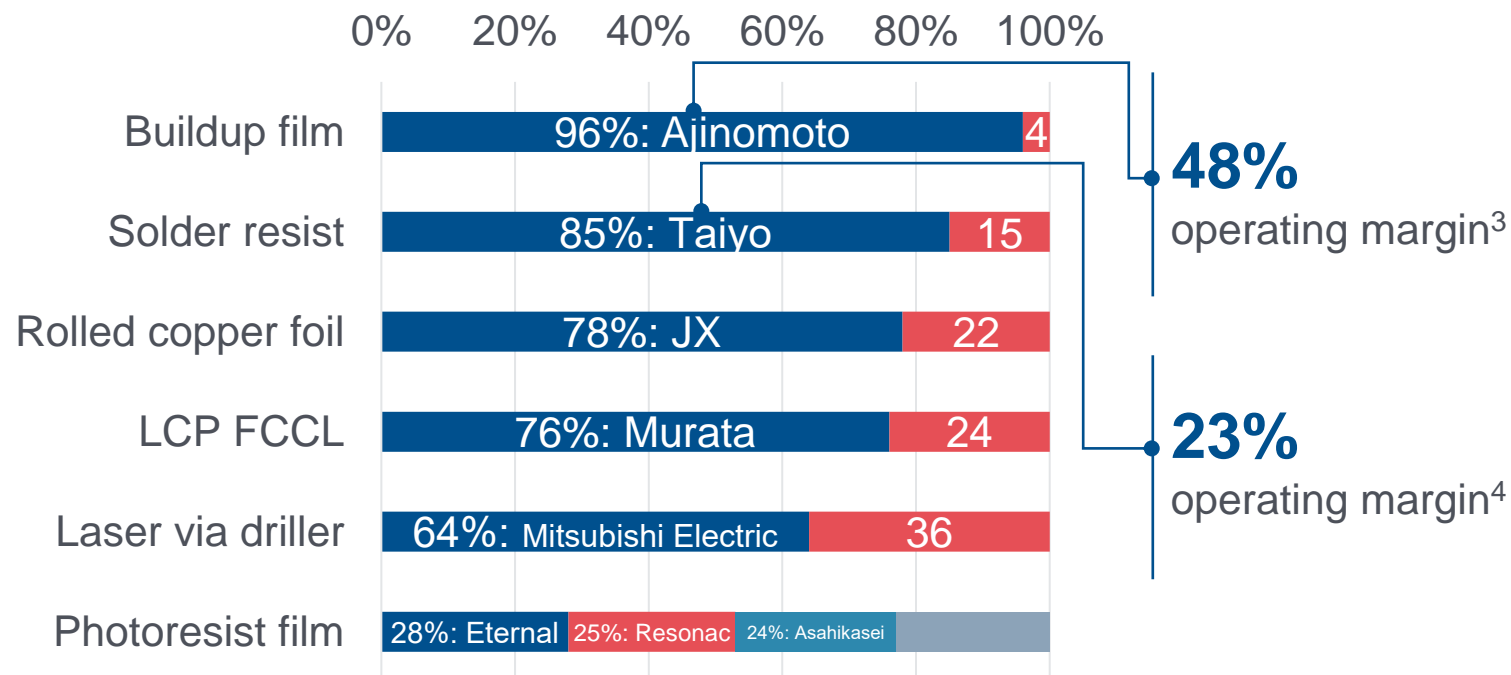
Printed Circuit Board Market Size¹
USD Billion, 2022-2030



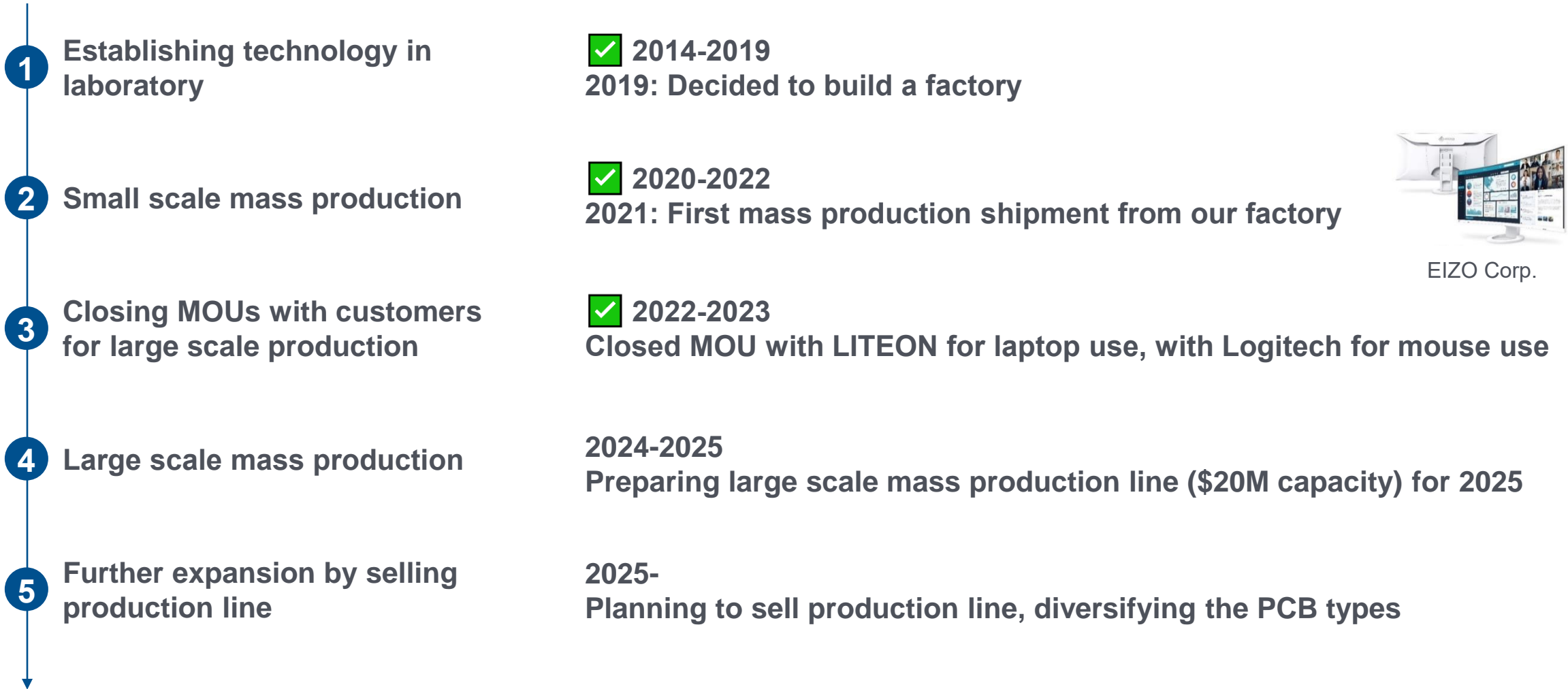
Monopolistic, profitable market

Just as in the semiconductor industry, the PCB materials and equipment market is highly monopolized, resulting in substantial profit

Market share of PCB materials and equipment²
2022, global share



Key milestones and our 10-year journey



Decarbonization drives the industry disruption

PCB industry is not the easiest industry to change even with a scientific breakthrough. Decarbonization plays a key role as an inevitable trend.



- Targeting to **decarbonize 24 million** of the 50 million LITEON manufactured keyboards annually that use backlights.
- LITEON has **strong commitment toward net-zero carbon** with ambitious climate action targets

1. Greenhouse Gas Emissions



66M t-CO₂eq, **0.13%** of global emissions¹

47% emissions of smartphone manufacturing²

10% of Apple's emission³

\$4.4B of potential carbon costs⁴

2. Wastewater Pollution



4M m³ of wastewater generated⁵

140,000 tons of copper contained

10~15 wt% of copper concentration

High concentration of hydrochloric acid

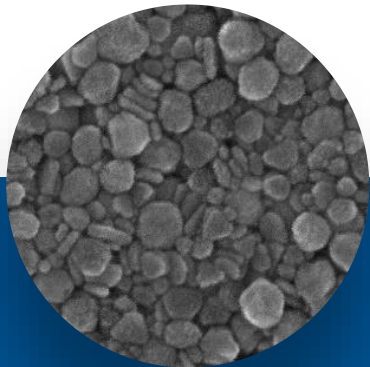
Chosen because we are the only player

Elephantech is a unique player to develop all necessary elements of additive process



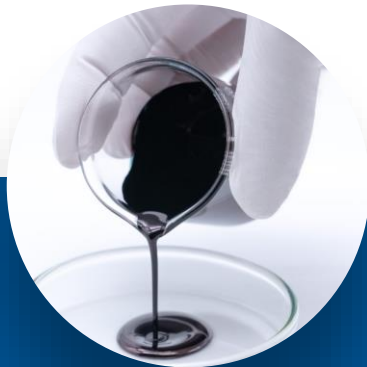
1 Nanoparticle Synthesis

Our process yields small and uniform copper nanoparticles essential to the production of stable metal ink.



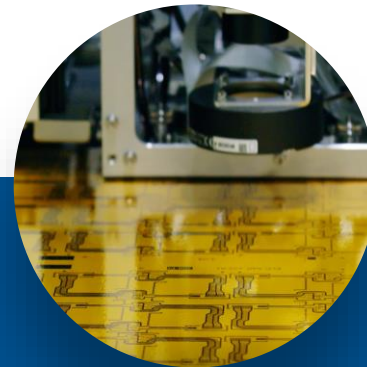
2 Metal Ink Formulation

We convert the nanoparticles into a stable metal ink that is optimized for inkjet printing with a long shelf life.



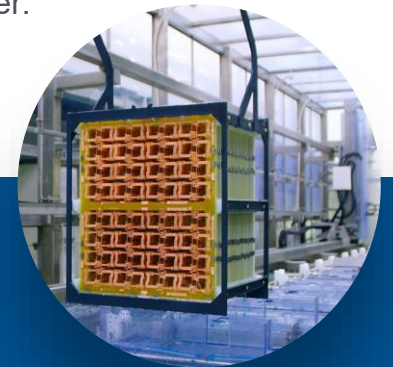
3 Metal Inkjet Printing

Our proprietary machinery and printhead control system enables precise inkjet printing of metal ink.



4 Electroless Plating

Our advanced high-speed electroless copper plating technology effectively enhances the thickness of the copper layer.



80+ applied patents and
1,700+ internal technical reports¹

Roadmap

2024-2025

Large scale production

Large scale mass production of
Single-sided FPC

LITEON®

logitech

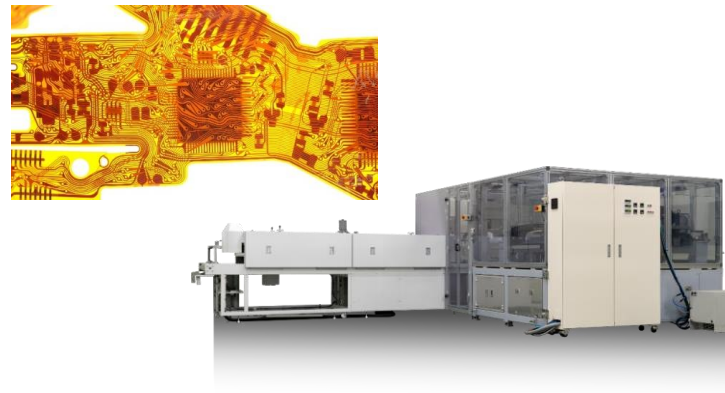


2025-2026

Expansion

Diversify product portfolio – Double-sided FPC and Rigid PCB

Start **Material & Equipment sales**



2027-2029

Global Standard

Be **Global Standard** of PCB manufacturing

Disrupt the existing market, including **\$8B** copper foil market

