

June 2025

Turning Solar Waste into Profit

**Online Seminar on Solar
Panel Recycling by WFEO**
July 4, 2025



**We transform solar waste into
strategic raw materials – with the only
scalable and profitable technology for
silver and silicon recovery.**

ABOUT US

SOLAR MATERIALS is the technology leader in the recycling of crystalline silicon solar modules.



Recycling CAPACITY

7,000 tons



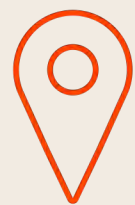
Since

2021



Team

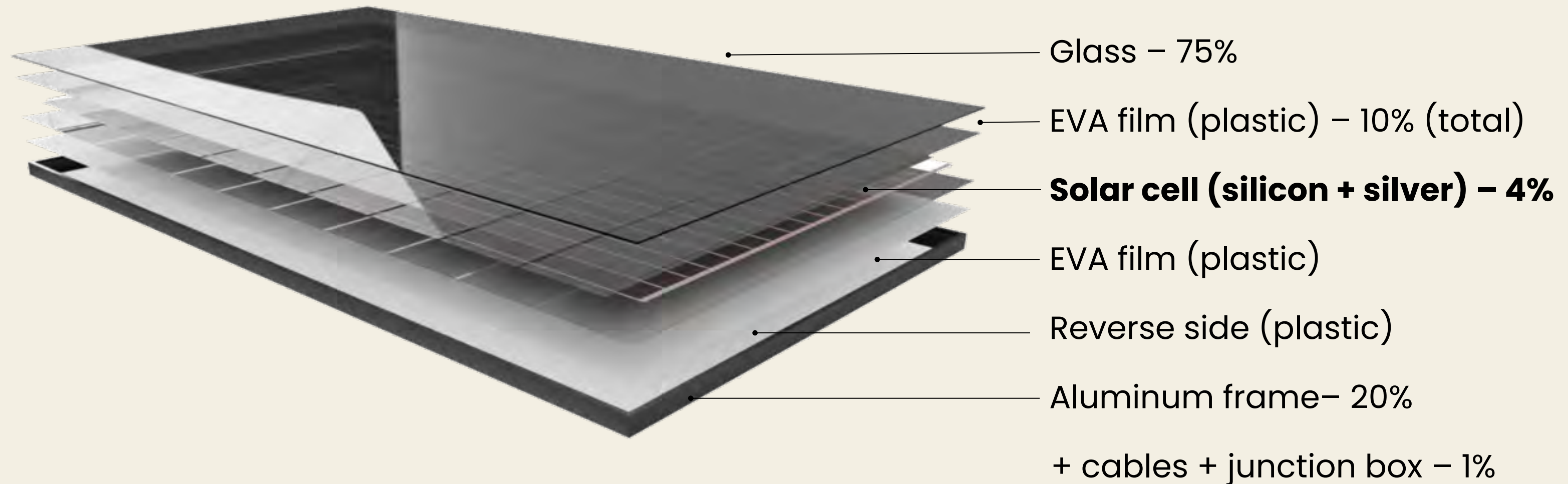
50+



located in
Magdeburg

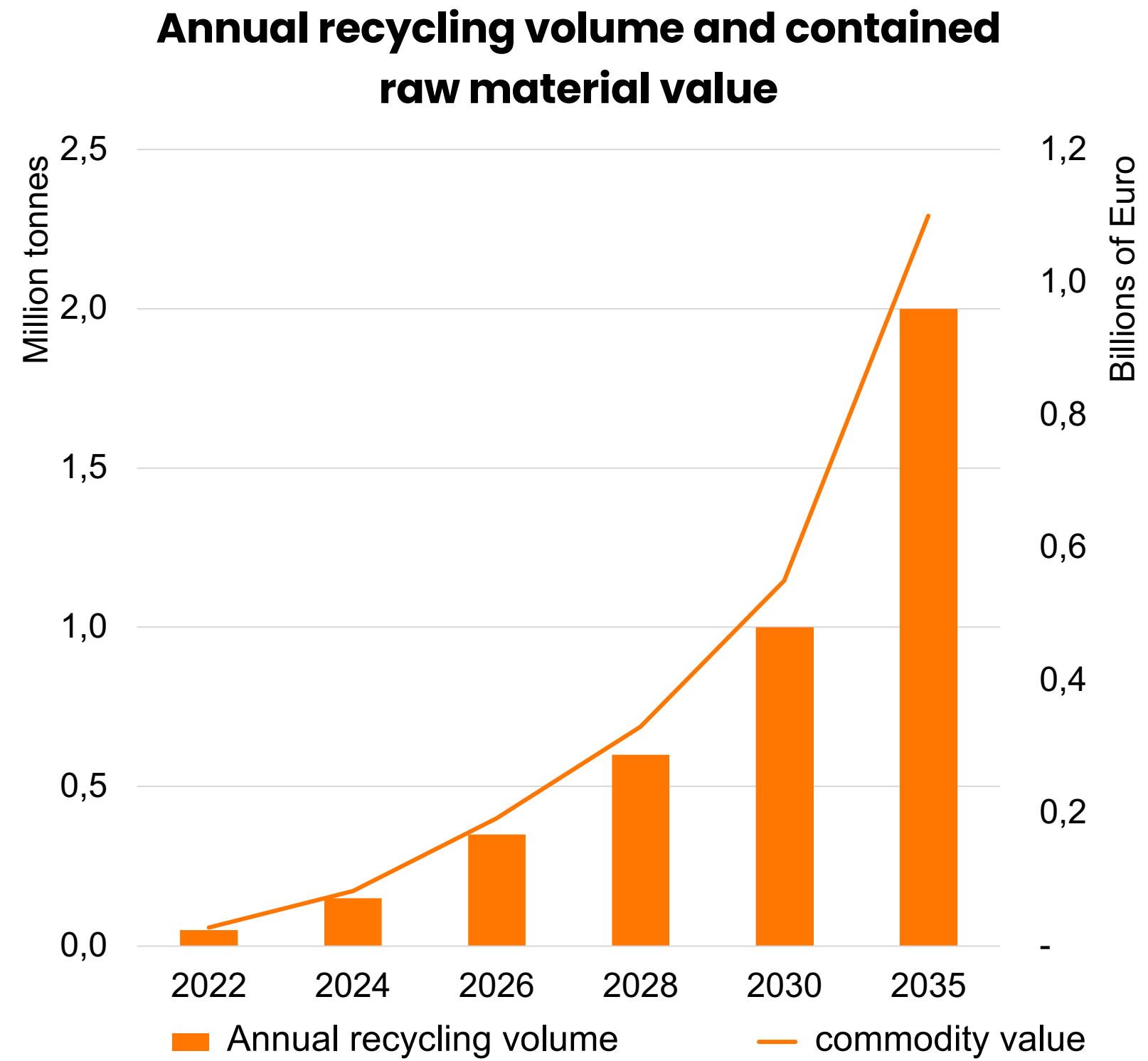
BESTANDTEILE EINES SOLARMODULS

95% of solar modules installed worldwide are **crystalline silicon solar modules.**



GLOBAL WASTE VOLUME

Annual waste volumes will increase **twenty-fold** by 2030.



DAMAGE PICTURE

Nowadays, premature damage from **poor production** dominates.



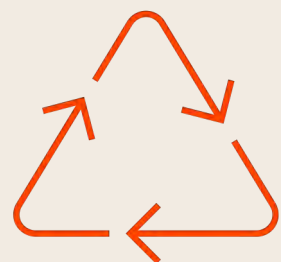
Production errors

e.g. defects on the back



Heavy weather

Storm, flood, hail



Technical end-of-life

25–30 year



SOLAR
MATERIALS

PROBLEM

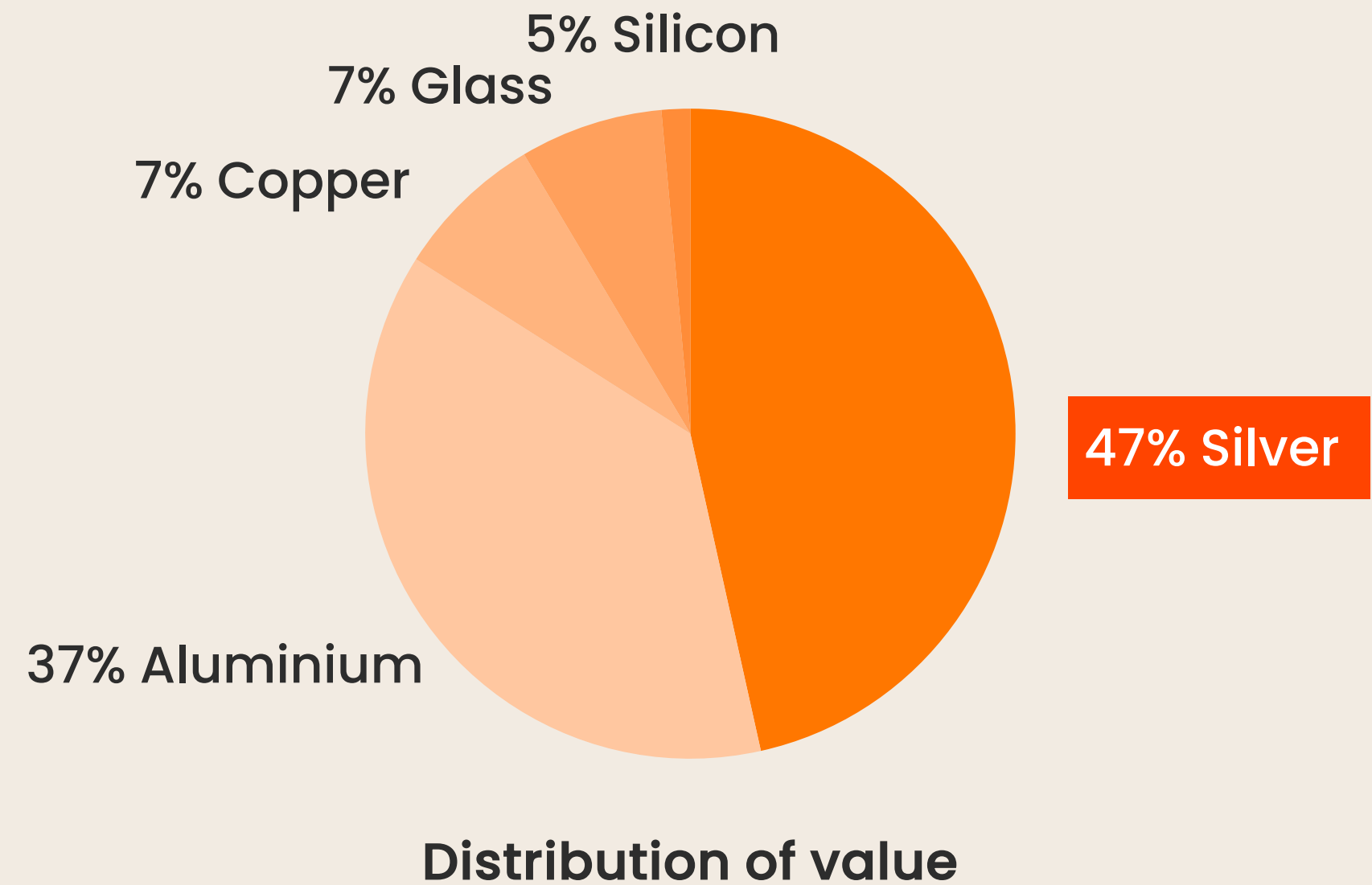
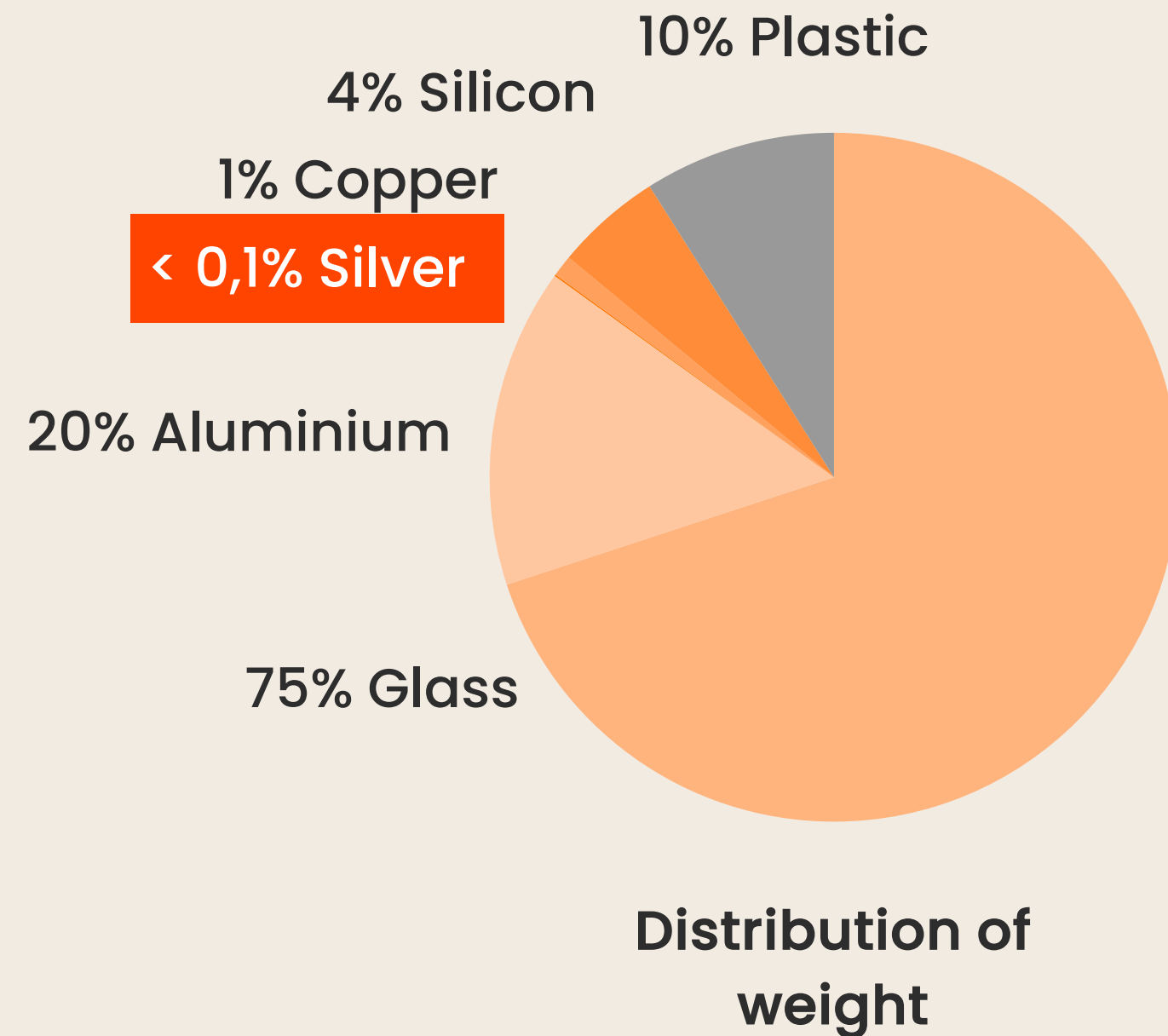
Silicon and silver are currently not recovered when solar modules are recycled.

- Silicon and silver recovery rate 0%
- Around 10% of annual silver production is used in the solar industry



ECOLOGY AND ECONOMICS

Silver is the value driver for economical recycling.



SOLUTION APPROACH

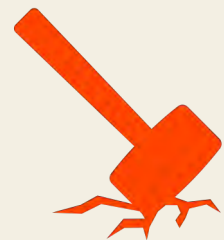
Dissolving the EVA film is fundamental to value-added recycling.



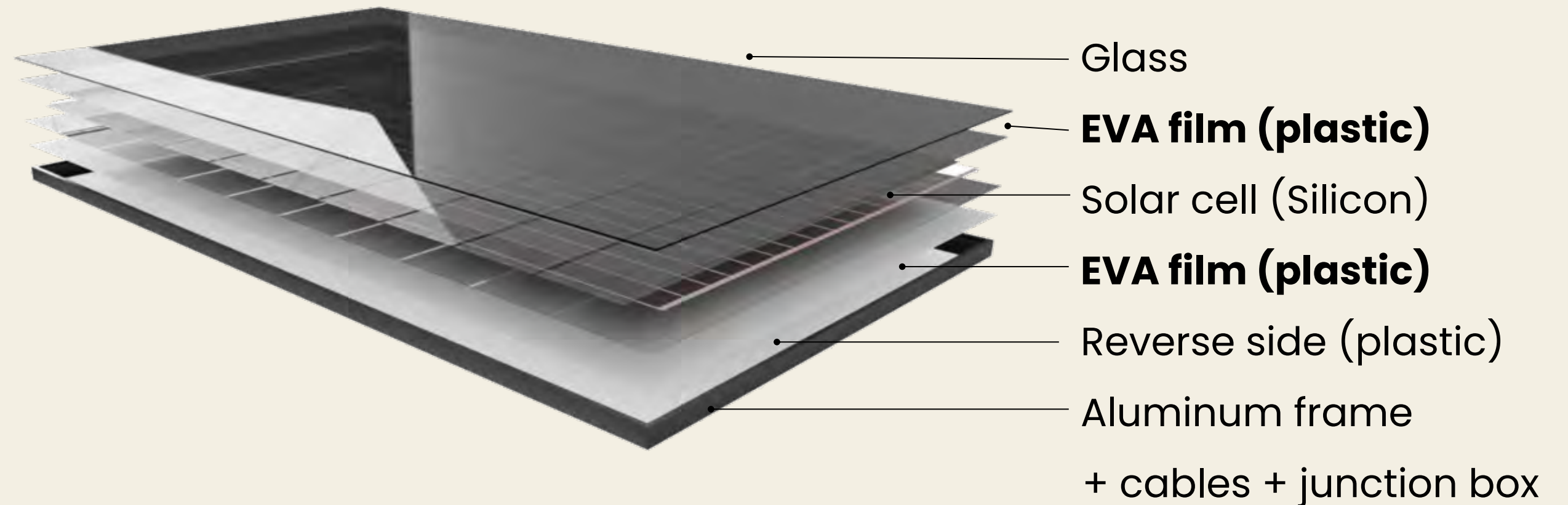
Thermal



Chemical



Mechanical

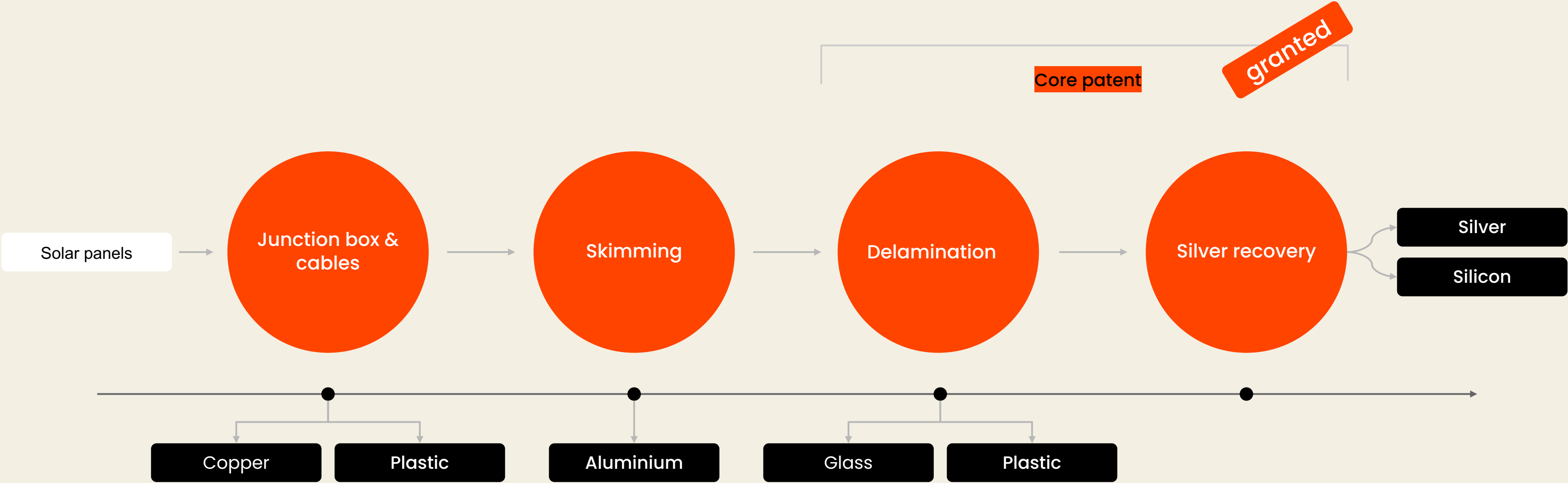


OVERVIEW OF THE COMPETITION

Approach	Thermo-mechanical	Shredding & Sorting	Waterjet & Chemical	Pyrolysis & Chemical	UV-flash
Profitability without recycling fee	✓	✗	?	?	?
Recovery of all materials and high value	✓	○	✓	✓	✗
Easy to scale and high throughput	✓	✓	✗	✗	?
Low investment costs	✓	✓	✗	✗	?
Available at industrial scale	✓	✓	✗	○	✗

PROCESS & IP

Patented and globally unique recycling process.





SOLAR
MATERIALS

**Fully automated recycling of up to
350,000 modules per year.**

OUR RAW MATERIALS

Recycled raw materials generally have an 80% lower energy consumption and CO₂ footprint.

Copper cable

Copper cables are a valuable raw material for the copper industry

Plastic

Goes to thermal utilisation due to lack of plastic recycling solutions.

Silver

Returns to the raw material cycle as refined fine silver.

Aluminium

Aluminium frames are a valuable raw material for the aluminium industry.

Glass

Is used as unmixed recycled glass for high-quality packaging.

Silicon

Is a raw material for a wide range of applications from alloys and chemical products to solar cells.



THE OPPORTUNITY

Solar modules are an important source of raw materials for the energy transition and a contribution to protecting the environment.

Recycling contributes to the development of a circular economy and secures local value chains.



OUTLOOK

We will expand our capacities to more than **35,000 tonnes end by end of 2026 .**

We will make it a European solution by building our first site in **Italy.**





Dr. Jan-Philipp Mai

CEO & Co-Founder

direct/mobile: +49 391 2519041-3

jp.mai@solar-materials.com



Recycling

SOLAR MATERIALS GmbH

Paul-Ecke-Str. 4

39114 Magdeburg



Second Life Check

Better Sol GmbH

Friedrich-Seele-Str. 28

38122 Braunschweig

