

Innovative Recyclingtechnologien für die Photovoltaikindustrie



LuxChemtech 

member of

 **esmc**
European Solar Manufacturing Council

RESOURCES
CIRCULAR ECONOMY
ENVIRONMENT

www.lc-freiberg.com



ESMC fordert 20 Milliarden Euro für den Wiederaufbau der Solarindustrie in Europa



[Home](#) [About us](#) [News](#) [Policy Topics](#) [Membership](#) [Events](#)

EUROPEAN SOLAR INDUSTRY RENAISSANCE

ESMC promotes solar manufacturing in Europe, the creation of a political environment to support industrial manufacturing and research, maintaining it at the top level globally.

[ABOUT US](#) ▶

[POLICY TOPICS](#) ▶

[SEE ALL MEMBERS](#) ▶

[BECOME A MEMBER](#) ▶

OUR MEMBERS



N E W S

Press Release: Solar manufacturing renaissance in Europe — appeal for RRF commitment

by europeansolar | Apr 12, 2021 | Press Release

The European Photovoltaic (PV) Industry is suffering from a lack of strategic policy priorities. With an import dependency and thus large economic values being lost, the whole region would benefit from a renaissance of the European PV industry. By vigorously reversing...

RESOURCES . CIRCULAR ECONOMY. ENVIRONMENT.



Preisentwicklung für Silicium

Login Register Member Center

PVinsights
Grid the World



Home Why Solar Retailer Price Contract Price Inverter Price Weekly Snapshots Price Download Monthly Insights Weekly Forecast Price

Latest Solar PV News

- Solar Panel Study Raises Rural Concerns in Loudoun Loudoun Now Apr 23, 2021
- IKEA to invest in renewable energy plants in India Construction Week Online Apr 23, 2021
- Amazon investing in local, global renewable energy projects The Highland County Press Apr 23, 2021
- Global High Purity Quartz Market Report 2021 - Keen Interest in Solar Energy to Curb Carbon Emissions Boosts High Purity Yahoo Finance Apr 23, 2021
- Elon Musk says Tesla will only sell solar panels together with its Powerwall storage battery from next week Business - Insider Apr 23, 2021
- PG&E, Utilities Push To Cut Subsidies For Home Solar

PV Poly Silicon Weekly Spot Price

Item	High	Low	Average	AvgChg	AvgChg%
PV Grade PolySilicon (9N/9N+)	21.250	13.000	19.400	↑1.54	↑ 8.62%
2nd Grade PolySilicon (6N-8N)	12.000	10.200	10.580	↑1.08	↑ 11.37%
N Mono Grade PolySilicon in China (12N/12N+)	21.250	20.850	21.020	↑1.49	↑ 7.63%
Mono Grade PolySilicon in China (11N/11N+)	Visit here for more Poly-Si price				↑ %
PV Grade PolySilicon in China (9N/9N+)	Visit here for more Poly-Si price				↑ %
PV Grade PolySilicon Outside China (9N/9N+)	Visit here for more Poly-Si price				↑ %

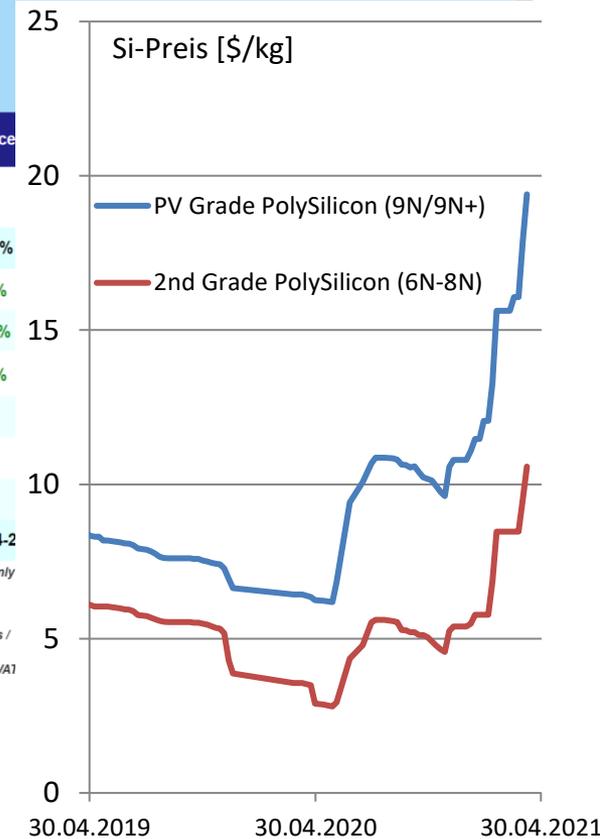
Unit: USD/Kg [more](#) Last Update: 2021-04-2

Definition of N Mono Grade: Poly silicon chunk or Chip Polysilicon with high purity can be directly produced to N-Type Monocrystalline Ingots, mainly supplied by Wacker, Hemlock, and Tokuyama

Definition of PV Grade: Poly silicon chunk with high purity can be directly produced to Solar PV Ingots / Bricks

Definition of 2nd Grade: Poly silicon chunk or FBR granular polysilicon must be mixed with high purity polysilicon, when producing Solar PV Ingots / Bricks.

PolySilicon Price In China: The Price is surveyed by RMB term with Tax and then shown in USD term without 13% of VAT after April 1, 2019, 16% of VA1 after May 1, 2018 and 17% of VAT before May 1, 2018.



Photovoltaik Abfall – das sind nicht nur Module

raw polysilicon ingot with side cuts (S)



S, B and T treatment (physical)



polysilicon bricks with tops (B) and bottoms (T)



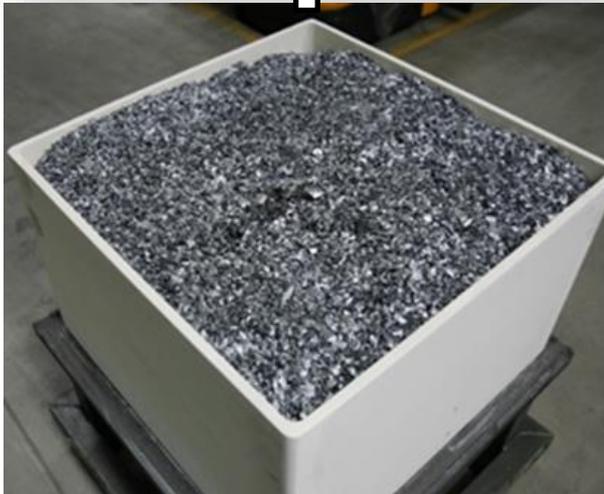
S, B and T ready for use



S, B and T treatment (chemical)

Photovoltaik Abfall – das sind nicht nur Module

raw polysilicon ingot with side cuts (S)



broken wafers (chemical)



Wichtig für eine nachhaltige Produktion ist die Erfassung aller Abfälle entlang der gesamten Prozesskette !

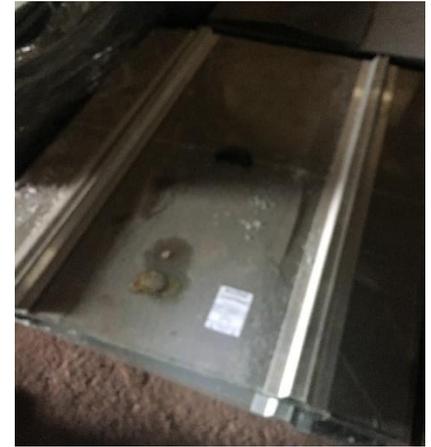


S, B and T ready for use

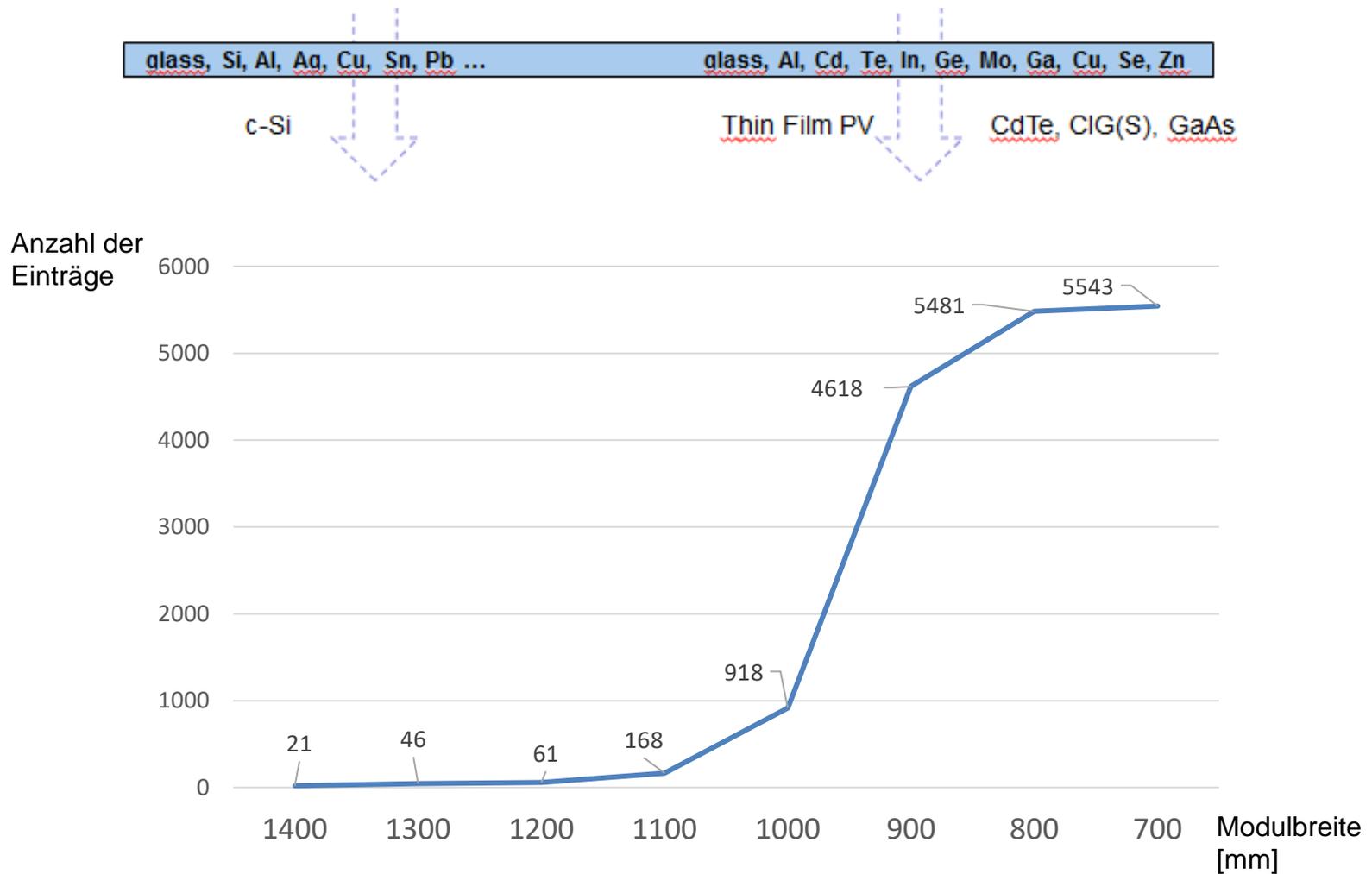


broken cells (chemical)

Photovoltaik Abfall am Ende der Kette – so viele Unterschiede!

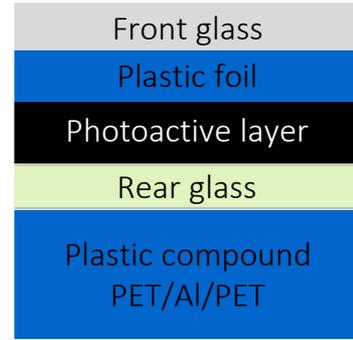
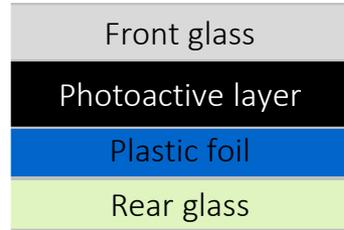


Photovoltaik Abfall am Ende der Kette – so viele Unterschiede!



Wir unterscheiden gegenwärtig zwischen 3 Typen

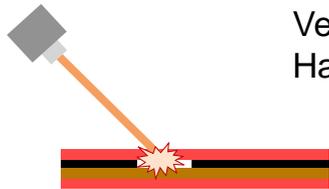
→ Spezielle Prozesse
werden benötigt



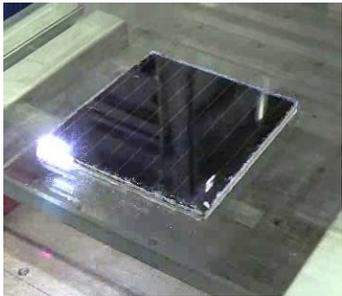
Prozesse für	Typ 1	Typ 2	Typ 3
physikalisch (Wasser)	-	x	x
physikalisch (Bestrahlung)	x	x	-
mechanisch (Trennung von Front- und Rückglas)	x	x	-
chemisch	x	x	x
mechanisch (Trennung von busbars, Zellen, Kunststoff)	-	-	x



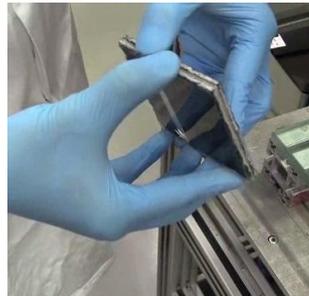
Materialzerlegung



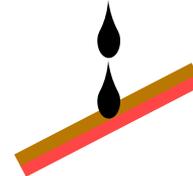
Verwendung von Licht um Halbleiterverbund zu schwächen



Vorher



Nachher



Die Halbleitersubstanzen werden aufgelöst.

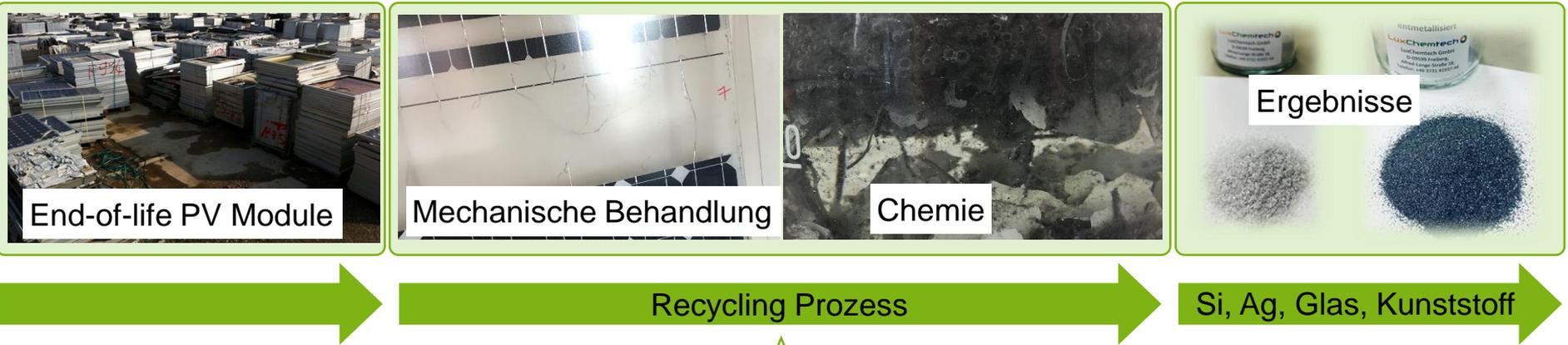
- möglich für verschiedene Metalle
- umweltfreundlich, weil
- biologisch abbaubar



Electrolyse liefert Metalle, z.B. Indium

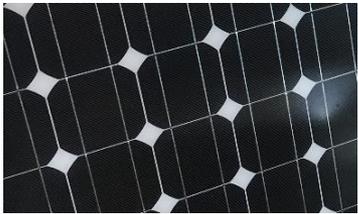
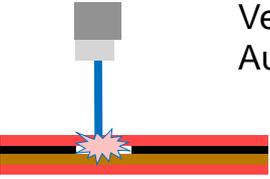


Chemiebad für die Extraktion



Materialzerlegung

Verwendung von Wasser zum Auftrennen und Reinigen



Die Silicium/Silber-Mischung wird chemisch behandelt.

- möglich für verschiedene Metalle
- umweltfreundlich. Weil
- biologisch abbaubar

Zusätzlicher Effekt

Silber und Silizium



Chemische Behandlung

Informationen zu



unter www.esmc.solar



- Greening the Solar Industry with PV-Recycling
- Certified waste management company
- Proven history of successful waste management solutions in Germany for the solar industry
- Sustainable recycling

Dr. Wolfram Palitzsch - w.palitzsch@lc-freiberg.com

LuxChemtech 
Freiberg, Germany