Reiling Group

PHOTOVOLTAIC RECYCLING

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Reiling
Photovoltaic Recycling

REILING – WITH US YOU CLOSE THE LOOP

The Reiling Group is one of the leading recycling specialists in Germany for glass, plastic, wood, photovoltaic modules, and much more. The production and marketing of foam glass gravel and Revitro are also part of Reiling Group's portfolio.

As a family-run recycling company, we have been committed to the conservation of natural resources as well as environmental and climate protection for more than 100 years by returning valuable raw materials to their cycles.

Nowadays, photovoltaics is a key component in the concept of renewable energies because this form of electricity generation conserves resources and saves CO_2 emissions. However, the service life of photovoltaic modules is limited – at present to approx. 20 to 30 years.

Due to the enormous growth rates, a disposal volume of several million tonnes is expected in Germany by 2050. In addition, many companies want to replace their still functioning modules with more powerful models at an early stage.

At our competence centre for PV recycling in Münster, we offer our B2B customers an all-round recycling solution: testing for reuse, PV recycling and transport services.

YOUR RECYCLING SOLUTION

PV RECYCLING AND TESTING FOR REUSE

We offer our B2B customers an all-round recycling solution from a single source: testing for reuse and PV recycling.

From module manufacturers, EPCs, solar park operators, operation and maintenance service providers, installers and businesses to distributors and collection systems - as one of the largest and most experienced photovoltaic recyclers in Germany, we are happy to support you with a simple, legally compliant, and individual all-round solution.

We accept all types of silicon-based PV modules at our 5 ElektroG-certified locations in Germany. The modules are tested and/or recycled at our new and also Germany's first exclusive PV recycling site in Münster.

THE ALL-ROUND RECYCLING SOLUTION

As an environmentally conscious PV recycling company, we not only want to offer our customers optimal solutions, but also make a maximum contribution to the conservation of resources.

Therefore, our all-round recycling solution for the disposal of your PV modules consists of two components: testing for reuse and/or recycling (ElektroG compliant). Depending on the requirements and condition of the PV modules, they are either professionally tested for reuse as second-life modules or directly sent for recycling.

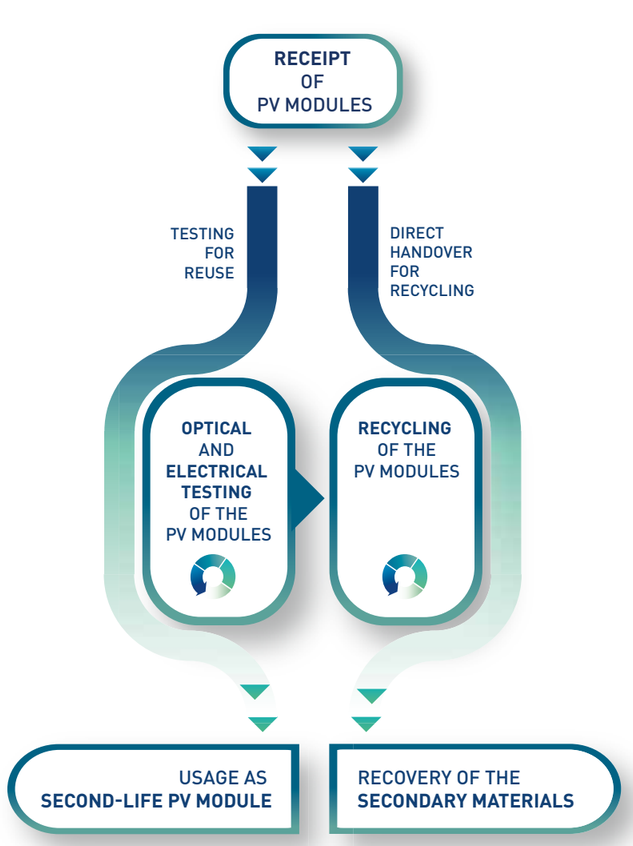
Thus, a disposal solution can be created that is resource friendly as well as economic and transparent for you. To maximise transparency and legal certainty, test protocols and recycling certificates are provided to comply with legal obligations.

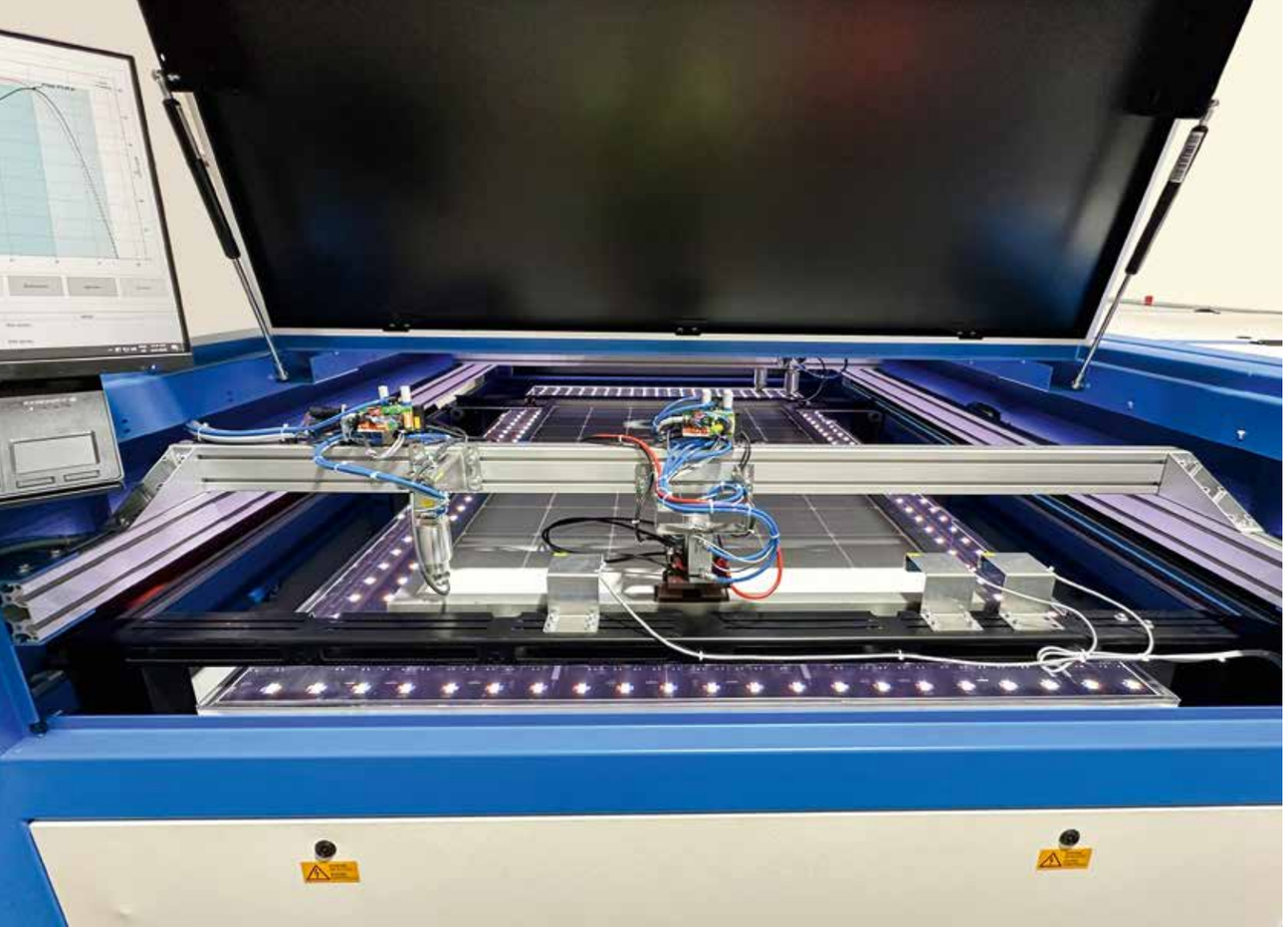
We also carry out the quantity reports to the EAR foundation. In addition, we have a nationwide transport network to assist you in the best possible way with the collection of the modules.

WE COLLECT, TEST AND RECYCLE

With more than 15 years of experience in PV recycling, we dedicate ourselves to this task with the highest level of commitment and professional know-how.

We support module manufacturers, EPCs, solar park operators, operation and maintenance service providers, installers, distributors, businesses, and collection systems.





TESTING
FOR REUSE

ECONOMIC. SUSTAINABLE. LEGAL.

The vast majority of installed PV modules are still intact after more than 10 years of use. However, a significant reduction in performance is often noticeable.

If the modules that are still in working condition are to be replaced with more efficient modules, for example in the course of an active solar park repowering, the recovery path of reuse is preferable to recycling.
By using them as second-life modules, the used resources can be conserved. To follow this simple sustainability principle, testing for reuse is the first part of our individual EOL concepts.

Visually undamaged PV modules are subjected to various test procedures to fully check their performance and electrical safety. If the test results are positive, the PV modules are reused or, if they do not pass, they are directly sent for recycling. Thus, every reused second-life module is fully tested and test reports are issued.

OUR TESTING METHODS

- Optical testing
- Power measurement (determination of residual module power with TÜV-certified flasher)
- Electroluminescence testing (detection/assessment of microcracks and connection failures in the solar cells)
- Tests to ensure electrical safety (Bypass diode test, HiPot test, insulation resistance test, grounding test)

RECYCLING
OF PV MODULES

SIMPLE. LEGAL. ENVIRONMENTALLY FRIENDLY.

Photovoltaic modules that are not suitable for reuse are processed in our multi-stage recycling process.

The recovery of valuable module components by type is a major challenge in photovoltaic recycling. With more than 15 years of experience, we dedicate ourselves to this task with great commitment and the highest level of technical know-how. Thanks to the continuous further development of our in-house developed and highly specialised recycling process as well as the use of state-of-the-art technologies, we are able to separate and process the materials efficiently.

As a certified primary treatment facility, we guarantee legal disposal as well as the best possible results – together with reliable partners – and meet the highest quality standards.

OUR
ENDPRODUCTS

Best possible quality for our customers.

After our recycling process we get the following end products:

- glass (coarse grain and fine grain)
- silicon
- aluminium
- conductors (tinned copper)
- cables
- foil

OUR END PRODUCTS

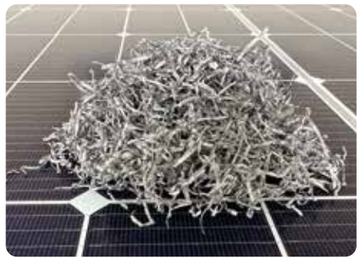
After our recycling process we get the following material fractions:

Glass coarse grain

Glass fine grain

Silicon

Aluminium



Conductors (tinned copper)

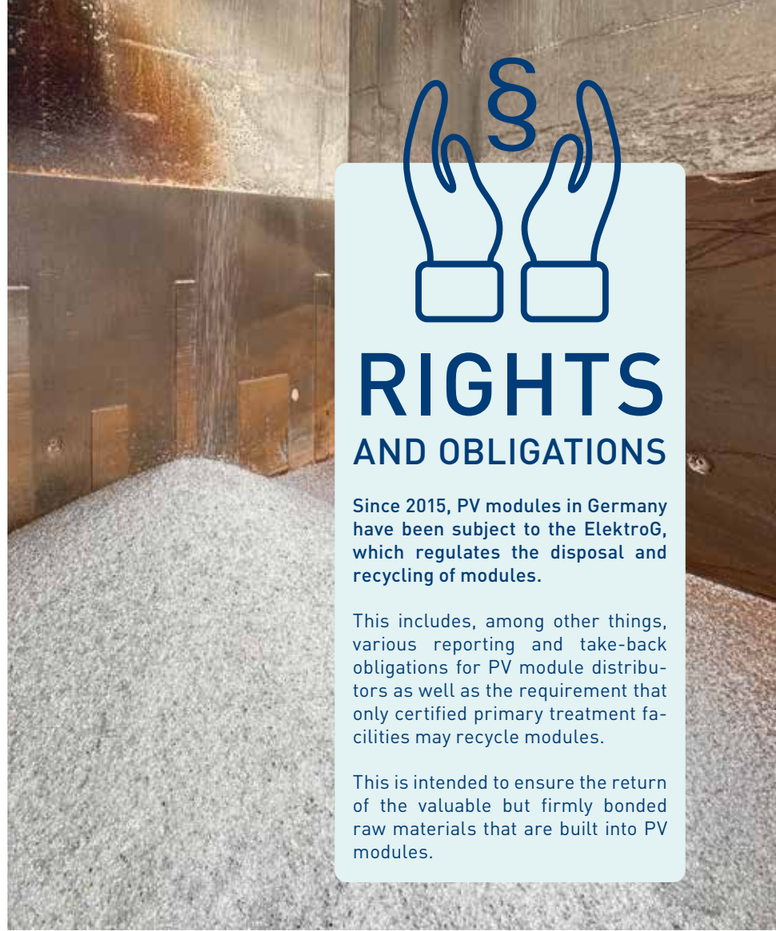
HIGHEST QUALITY

BEST POSSIBLE QUALITY FOR OUR CUSTOMERS

We can offer our customers secondary raw materials of high purity and quality.

Glass, as the main component of PV modules, is the predominantly recovered secondary raw material. However, other materials such as silicon, aluminium, conductors and cables are also efficiently recycled and returned to high-quality applications.

Through our innovative recycling solutions, we will remain a strong and reliable partner for our customers in the future.



RIGHTS AND OBLIGATIONS

Since 2015, PV modules in Germany have been subject to the ElektroG, which regulates the disposal and recycling of modules.

This includes, among other things, various reporting and take-back obligations for PV module distributors as well as the requirement that only certified primary treatment facilities may recycle modules.

This is intended to ensure the return of the valuable but firmly bonded raw materials that are built into PV modules.

MÜNSTER

Reiling
Photovoltaic Recycling

PV RECYCLING COMPETENCE CENTRE

PV recycling competence centre Münster – the first Reiling photovoltaic recycling site in Germany.

In June 2023, we fully commissioned our newly built PV recycling site in Münster, where we operate the collection, testing for reuse and recycling of silicon-based PV modules.
Due to the pure PV focus and the consistent design of the site to the defined process flows, an optimal and highly efficient recycling of the delivered PV modules can be guaranteed.

In addition to the test line, the focus is on the innovative and in-house developed PV recycling plant. Particularly with regard to the recycling plant construction, the technologies used and the process sequence, it was possible to draw on the experience, expertise and research results gathered over the past 15 years.

The mechanical recycling process enables us to offer our customers secondary raw materials of high purity and quality and we are optimally prepared for the disposal volumes expected from Europe in the future.

Reiling
Photovoltaic Recycling

Locations total: 19
Locations PV: 5
Business areas: 8
Employees: › 650
Quantity volume: › 1 Mio t/year
Experience: › 100 years

LOCATIONS
PHOTOVOLTAIC

Competence centre PV recycling and testing for reuse:

Reiling PV-Recycling GmbH & Co. KG
Hessenbusch 180 • D-48157 Münster
E-mail: pv.recycling@reiling.de
Phone: +49 251 133419 2324

Acceptance of PV modules:

Reiling PV-Recycling GmbH & Co. KG
Hessenbusch 180 • D-48157 Münster

Reiling Glas Recycling GmbH & Co. KG
Bussemasstraße 49 • D-33428 Marienfeld

Reiling Glas Recycling GmbH & Co. KG
Appendorfer Weg 4 • D-39171 Sülzetal (Oster-
weddingen)

Reiling Glas Recycling GmbH & Co. KG
Solarstraße 15 • D-04860 Torgau

Reiling Kunststoff Recycling GmbH & Co. KG
Im Grund 13 • D-91593 Burgbernheim

Contact:
E-mail: pv.recycling@reiling.de
Phone: +49 251 133419 2324

FAMILIAL
SOCIAL

INNOVATIVE
FUTURE-ORIENTED

COMPETENT
GROUNDED

RESPONSIBLE
FAIR

CONSCIOUS
ECO-FRIENDLY

VALUES OF REILING GROUP

Sustainability equals the future to us.

This is what we at Reiling Group are committed to. We see environmental and climate protection as an important task and take this into account in all corporate decisions.

Protecting the environment and using natural resources sparingly depend on the commitment of every single employee and are firmly anchored in our business policy and corporate philosophy. We also rely on renewable energies in the company as far as possible. Our innovative combined heat and power plants for generating energy and heat and our photovoltaic systems for generating our own electricity are practical examples of this. Similarly, a smart energy management system demonstrates our sense of responsibility towards the environment and the efficient use of resources (DIN ISO 50001 certification).

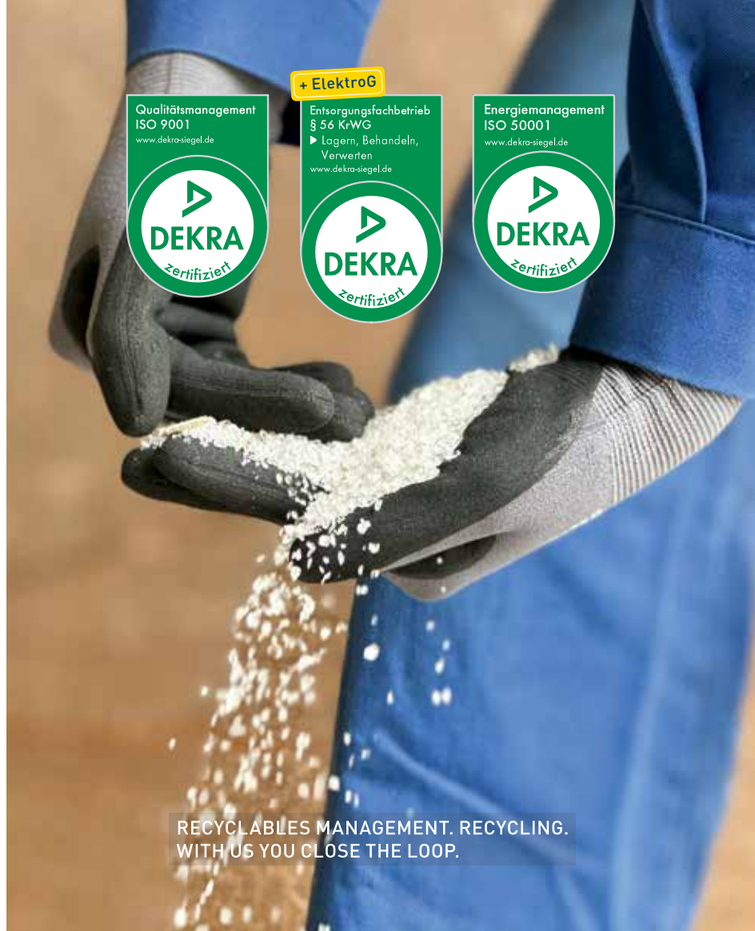
TRUST

CERTIFIED DISPOSAL SECURITY

We represent quality and reliability.

However, we never leave good enough alone. We are our own strictest auditors in order to continuously improve and always meet the qualitative and legal requirements. We also submit to audits by external certifiers at regular intervals.

We are DEKRA certified:
Quality management to ISO 9001
Disposal specialist operation
Energy management to ISO 50001



Headquarter Reiling Group, Marienfeld.

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Reiling PV-Recycling GmbH & Co. KG

Hessenbusch 180
48157 Münster
Germany

Phone: +49 251 133419 2324
Fax: +49 251 32706459
E-mail: pv.recycling@reiling.de
www.reiling.de

AG Münster HRA 9477
VAT no. DE284783920
Managing director: Tom Reiling