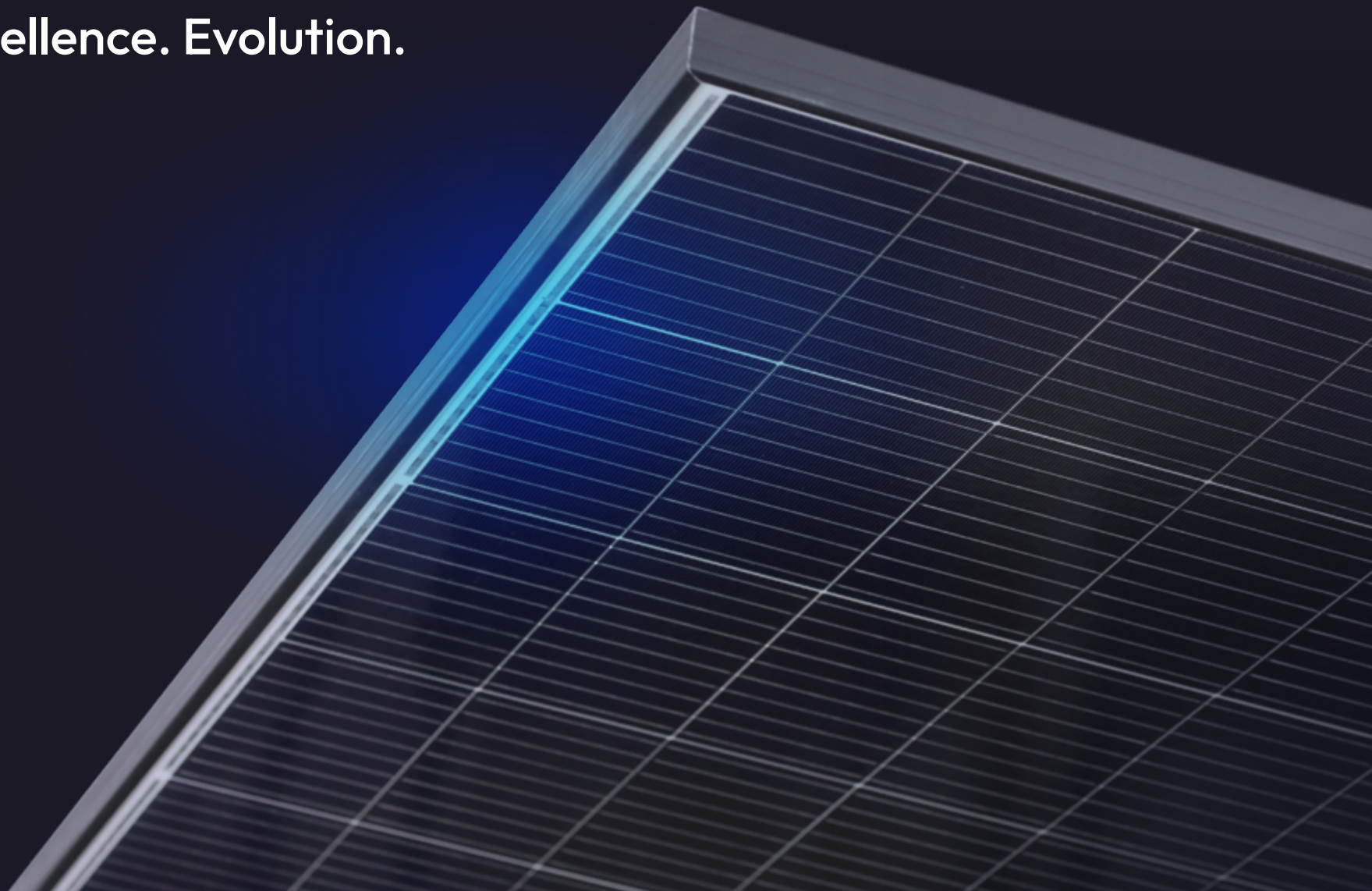
3SUN

Energy. Excellence. Evolution.



Europe’s first Gigafactory

Who we are

We are the only **European company** that manufactures **solar cells and modules**, supported by a cutting-edge research center dedicated to the development of **industrial photovoltaic technology** and its continuous evolution.

Vision

We are shaping a future powered by solar energy through continuous innovation.

Mission

We support the energy transition through high-performance, sustainable solar technologies.

Values

Ambition

We aspire to play a leading role in the reshoring of Europe’s photovoltaic industry.

Passion

We believe in building a better future through our everyday actions.

Closeness

We believe in building strong relationships with our customers and stakeholders.

Innovation

We serve as a hub of technological excellence for Sicily and Italy.

A New Era for EU-Made Photovoltaics

3SUN is a key player in the energy transition with **cells and modules Made in Europe**, the company is committed to combining skilled employment, innovation, and environmental responsibility.

The Photovoltaic Sector Restarts from Sicily

Sicily is once again at the center of the industrial and technological landscape in Italy and Europe.

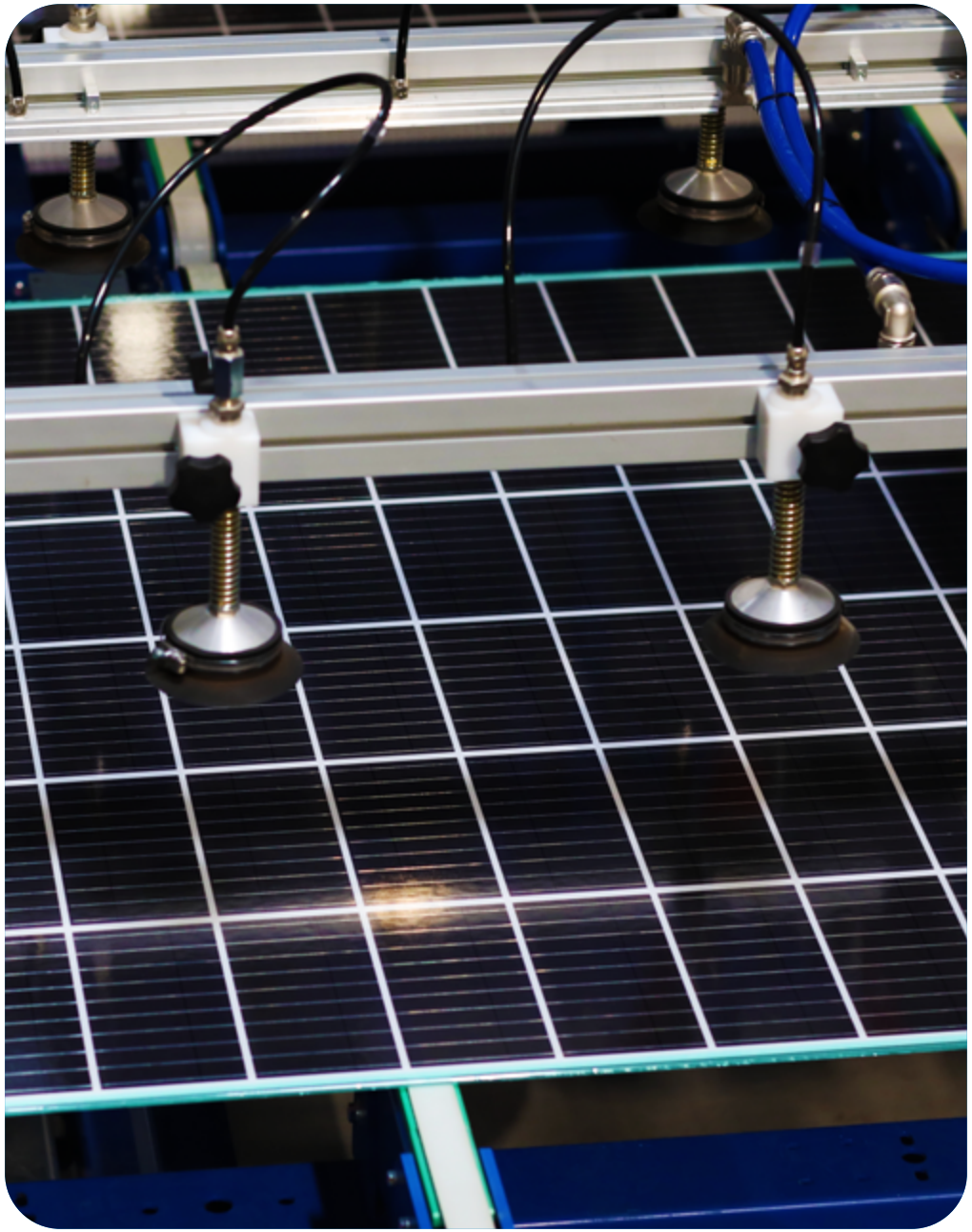
3SUN is revitalizing the photovoltaic sector in Catania, which, together with the semiconductor industry, represents a tangible opportunity for social growth and national progress.

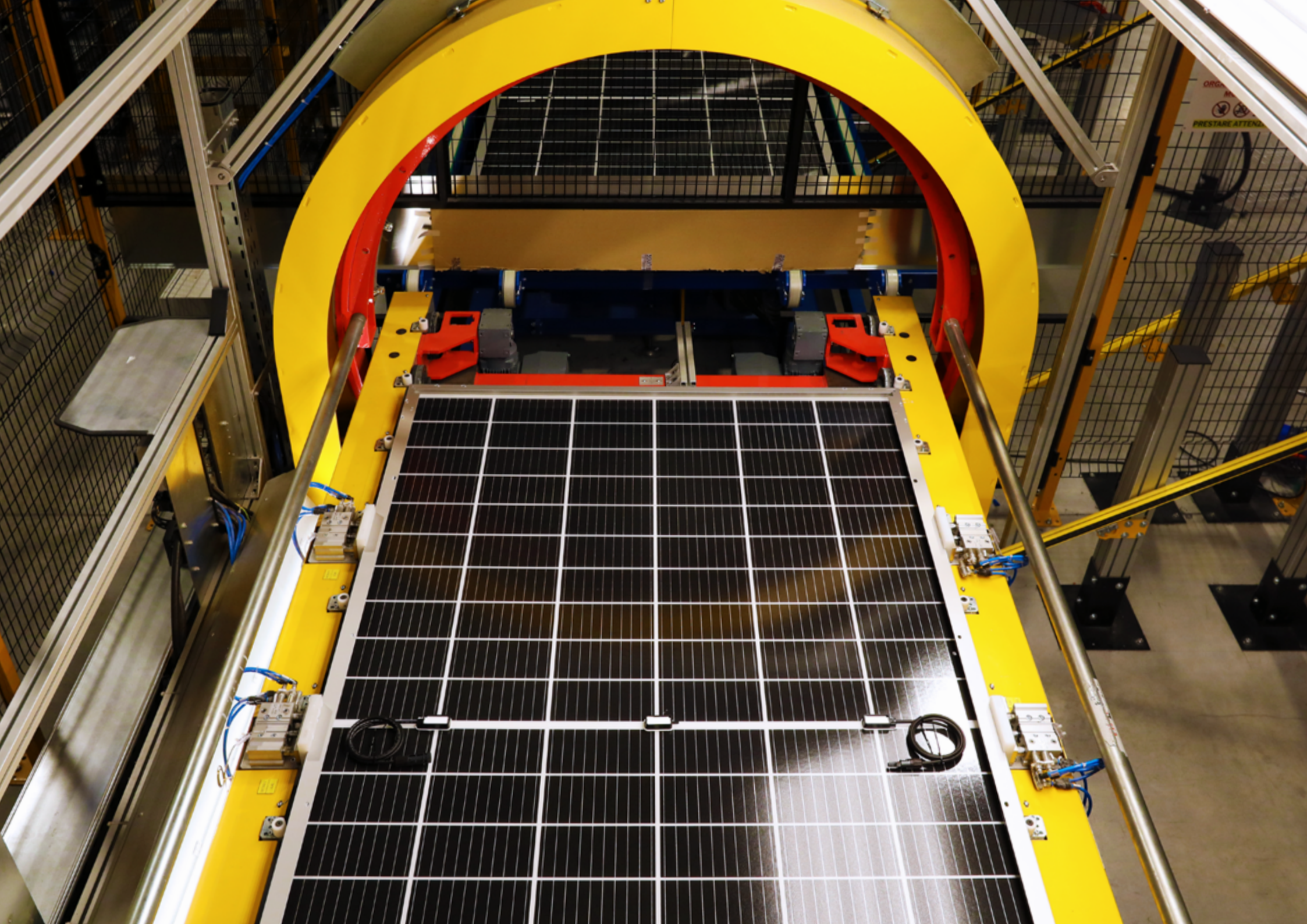
A Technology Hub Contributing to the Energy Independence of Italy and Europe

3SUN is committed to building an **industrial ecosystem** that reduces dependence on third countries, values **people's contributions**, and attracts new talent to Sicily — strengthening the energy independence of Italy and Europe.

Our goal is to leverage and expand the know-how already present in the Etna Valley—a region rich in related expertise and technologies—by creating an innovative and inclusive environment.

An environment designed to foster professional growth, retain top talent, and strengthen the country's sustainable development and competitiveness.





Advancing Photovoltaics to the Next Level

3SUN — A Research and Development Center of Excellence

Research and Development

Our company is a driver for innovation. We have a local team of experts dedicated to research and development of advanced technologies, continuously enhancing the performance of our solar modules and ensuring high energy yields for our customers.

HJT Technology: our flagship

Innovators from the start, we developed a bifacial heterojunction (HJT) technology based on processes similar to those used in the semiconductor industry, enabling our solar cells to capture light from both the front and rear sides. Along with several other innovations, this has allowed us to overcome the limits of silicon technology and generate increasing amounts of solar energy for the benefit of our customers.

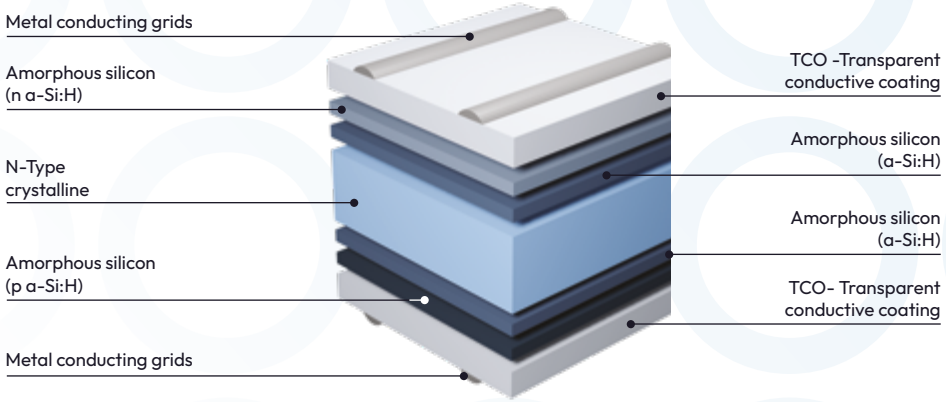
The Future: Tandem Technology

To stay at the forefront, we never stop innovating. Our Tandem technology stacks a perovskite cell on top of an HJT cell to capture a broader portion of the solar spectrum, including blue and green wavelengths.

To date, we have already achieved a laboratory efficiency record of 30.8% on a 9 cm² test cell.

3SUN CORE-H®

The Best Technology to Fully Harness the Power of the Sun



The Most Advanced Technology to Fully Harness the Sun's Energy

Our HJT technology delivers outstanding performance, enabling solar modules that are more efficient, durable, and competitive.
3SUN CORE-H® converts the maximum amount of sunlight, achieving excellent efficiency levels compared with solutions currently on the market.
Thanks to superior energy yield performance, our technology outperforms PERC and TOPCon solutions, further accelerating solar energy generation.

But **CORE-H®** means even more:

- **Reduced performance degradation over time.**
- **Exceptional stability at high temperatures with excellent humidity protection.**
- **Lead-free and fluorine-free HJT module.**
- **An ideal development platform for future Tandem technology.**

Our competitive advantage stems from the expertise of our team and our close collaboration with leading research institutes, such as the Institut National de l'Énergie Solaire (INES), a division of the Commissariat à l'Énergie Atomique et aux Énergies Alternatives, the French Alternative Energies and Atomic Energy Commission (CEA).

And we are not stopping there: we are developing a Tandem structure that combines heterojunction and perovskite technologies to increase the portion of the solar spectrum that can be converted into electricity.

3SUN CORE-H® is a registered trademark in the European Union and the United Kingdom. An international trademark application has been filed. All rights are reserved by 3Sun S.r.l.

Our Story

Strong Roots, Bold Ambitions

2010

The Foundation of 3SUN

We were founded as a joint venture between Enel Green Power (EGP), Sharp, and STMicroelectronics.

2015

Enel Becomes Sole Owner

Enel acquired 100% of 3SUN's shares.

2018

First HJT Technology Launch

The existing production lines were converted to create a cutting-edge HJT technology platform.

2022

Transformation into a Gigafactory

The project to expand production capacity to 3 GW was launched, marking 3SUN's evolution into a full-scale Gigafactory.

2024

Start of the Gigafactory Production

In December 2024, the first 70,000 photovoltaic modules (40 MW) are already available for sale.

2025

Efficiency Record

Our Tandem technology set a new world record, achieving 30.8% efficiency on 9 cm² test cells.

2028/29

Tandem Technology

Commercial availability of the new Tandem technology.

The Numbers behind 3SUN's Mission

3 GW

Annual production capacity, equivalent to approximately 800,000 solar cells and around 15,000 photovoltaic modules per day.

1 Bn €

Total investment (including €190 million from the European Innovation Fund and the national "Development Contract" program).

1000 **Employees at full capacity**

According to a growth plan aligned with the evolution of the photovoltaic market, generating positive impacts across the entire supply chain.

Innovation and Protection

A robust patent portfolio safeguarding proprietary technologies and global competitive advantage

At the heart of 3SUN's strategy lies a portfolio of proprietary solutions designed to ensure quality, reliability, and a competitive edge. Every innovation is crafted to protect our know-how and create value, reinforcing our position as a technology leader in renewable energy.

Our Portfolio

- **Around 80 individual titles**, including granted patents and pending applications across key strategic geographies.
- **Approximately 200 codified trade secrets**, developed to safeguard the company's proprietary know-how.

Our Patents

Our patents cover cutting-edge solutions that push the limits of efficiency and sustainability in solar technologies:

- **Tandem Technology**: Innovations that enhance light absorption and maximize energy conversion;
- **HJT (Heterojunction) Technology**: Solutions that combine the performance of crystalline silicon with thin-film materials, delivering higher efficiency and lowering production costs;
- **Integrated Systems**: Versatile applications that combine the benefits of multiple technologies, opening new opportunities in emerging markets.

In the harsh conditions of the Atacama Desert, 3SUN's heterojunction (HJT) solar modules have consistently outperformed leading PERC technologies, delivering up to 6.6% higher energy output.

Since 2022, 3SUN has been conducting field tests with the Institut National de l'Énergie Solaire (INES) and ATAMOSTEC at 2,400 meters above sea level, exposing the modules to intense sunlight, extreme temperature fluctuations, high UV radiation, and airborne dust. The bifacial HJT modules were compared with market-leading mono-PERC technologies, both on fixed structures and single-axis trackers, supported by an advanced monitoring system.

The results confirm lower thermal losses, no performance degradation, and a higher overall energy output for 3SUN modules, even after prolonged exposure to extreme environmental conditions.

These results confirm that 3SUN's HJT technology delivers long-lasting efficiency, reliability, and durability, underscoring its real-world value in advancing the energy transition.

3SUN

Driving the **Energy Transition** we advance **EU-made solar technologies** through significant and sustained investment in research and development.

3SUN Srl
Contrada Blocco Torrazze snc
Industrial Zone
95121 Catania, Italy

Visit our website
www.3sun.com/it