

SOLAR
SUSTAINABILITY
AWARD



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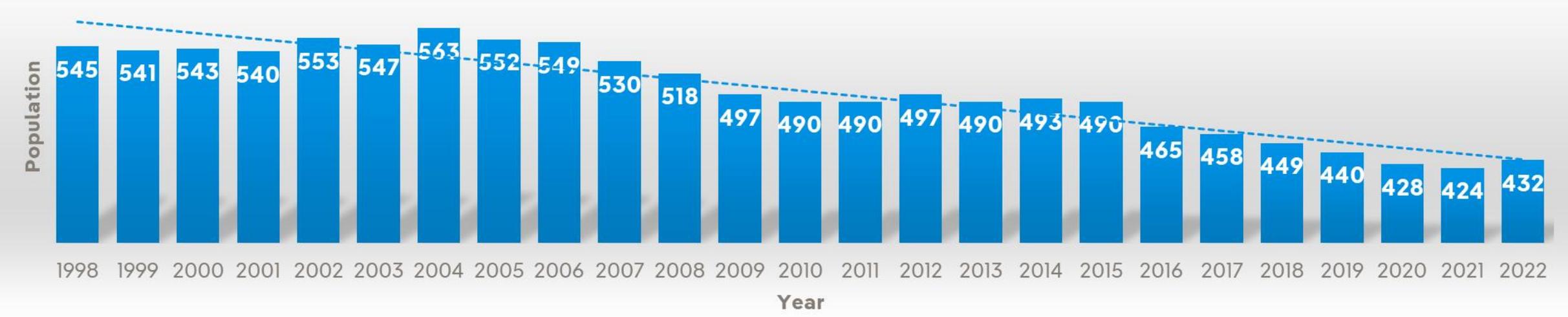
SOLAR SUSTAINABILITY AWARD 2023

SOLAR ENERGY COMMUNITY
IN CEDILLO

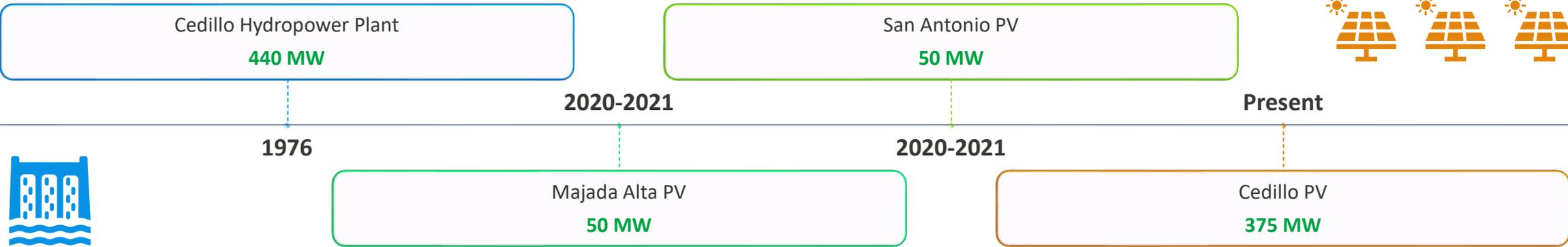
AN EXAMPLE OF INTEGRATION

Cedillo: the westernmost municipality of Extremadura

Cedillo's Population Evolution



Iberdrola has been operating in the Cedillo municipality over the last 47



PV Cedillo 375 MW



Solar Energy Community in Cedillo: Project description / outline

- **Collective Self-consumption Scheme:**

- Consumption point located within 500 meters of the generation point.
 - Concession of low voltage access and connection through existing transformer stations in the i-DE distribution network.
 - Self-consumption mode with surplus and simplified compensation mechanism.
- **Iberdrola** assumes the **installation cost (340 kWn) and manages the energy** .
 - Installation **in municipal locations** with the necessary and suitable surface area to cover 50% of the estimated consumption of 100% of the population.
 - **Conditions** applicable to **new registrants** within the next 5 years .
 - **Constitution of energy communities** whose participants, beneficiaries and owners are the residents of the municipality.



Signing of the agreement between Iberdrola Renewables and the mayor of Cedillo

*"We are living off Iberdrola's projects, and **it allows us to ensure that this municipality is not going to disappear in the short term**"*

*"The neighbors see it as **a way for the municipality to survive**"*

*"I aspire for this municipality to be the **green energy municipality** for many years"*



THANK YOU!

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TrinaSolar

The Road To Climate-Neutrality

2023 SOLAR SUSTAINABILITY AWARD

11 billion trees

202 billion kWh

150GW+

Trina Solar's total global shipment of modules as of 1H2023

201.9 million tons

Total CO₂ Emission Reduction

6.08 million tons

Total SO₂ Emission Reduction

55.1 million tons

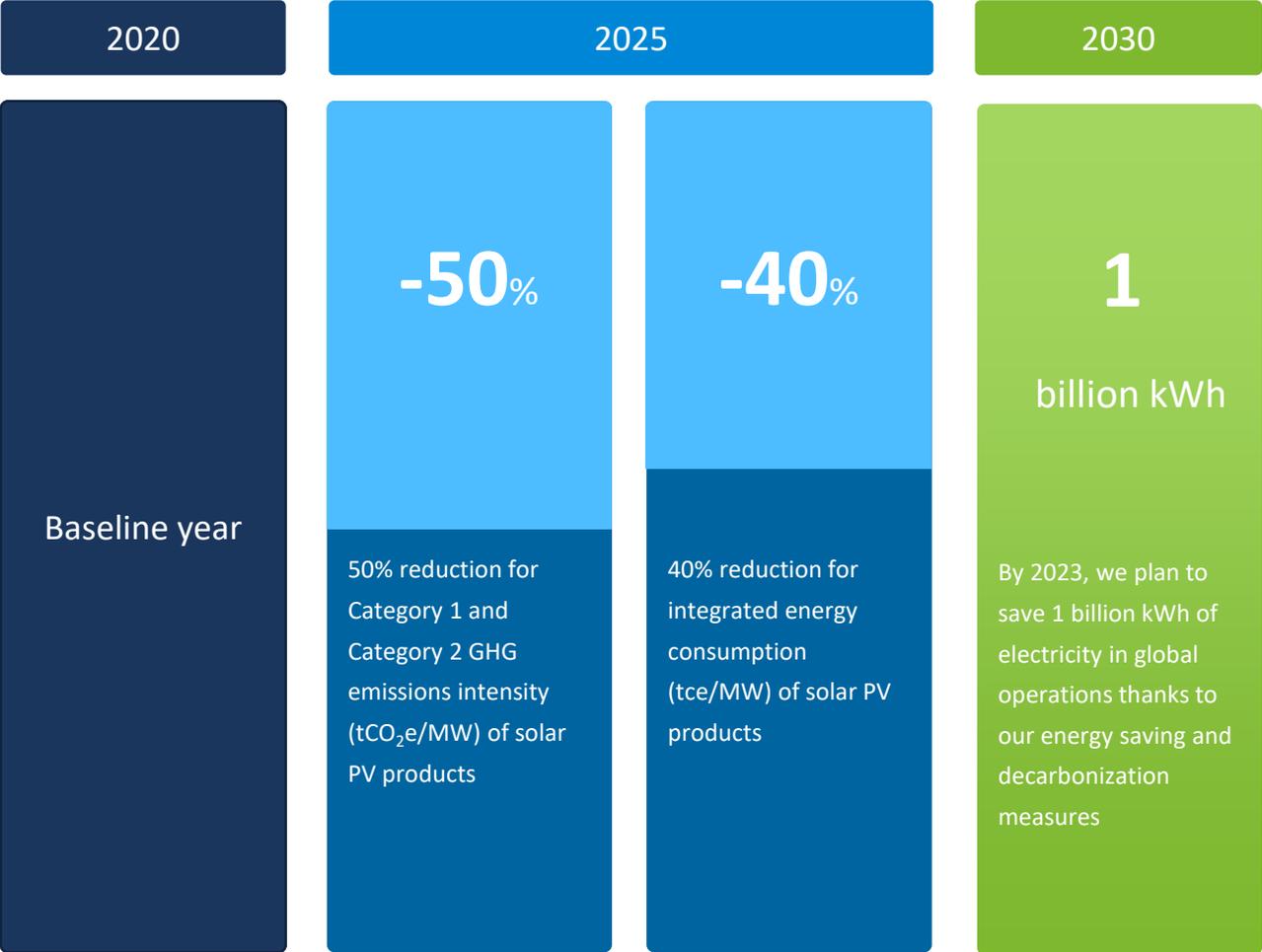
Total Carbon Dust Emission Reduction

**BUSINESS
AMBITION FOR 1.5°C** 

Science Based Targets Initiative

Net-Zero Operations

Energy Use and Emissions Savings



100%
**Renewable
Energy in
our global
Manufacturing
and Operations
by 2030**

Decarbonizing industry beyond solar

Trina Solar Green and Zero-Carbon Factories

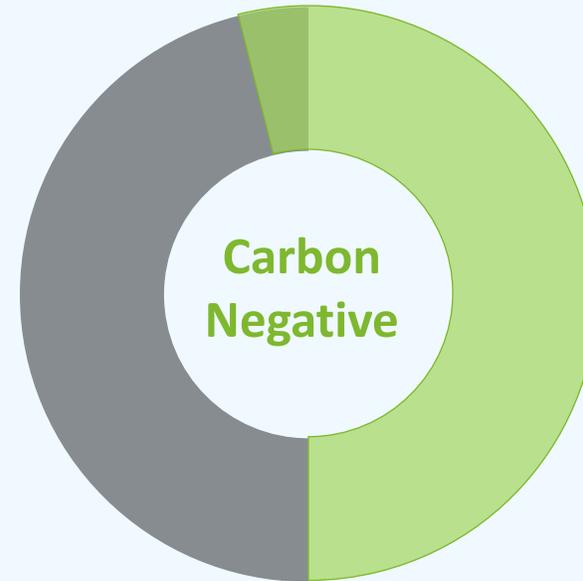
The Trina Solar Yiwu factory is the first PV module factory in the world to be certified **Zero Carbon Factory**

TI Testing & Certification, April 2023
Zero Carbon Factory Evaluation Specifications T/CECA-G0171-2022

4.48
million tons

Total carbon emissions during production, operation and R&D of all manufacturing bases:

4.48 million tons.



4.82
million tons

Reduction of total carbon emissions through PV stations, PV roof electricity generation, green electricity purchase, energy conservation and consumption reduction:

4.82 million tons.

Building a Net-Zero Energy System



A close-up photograph of a bee on a yellow flower. The TrinaSolar logo is overlaid on the image, featuring the word "Trina" in blue with a red dot above the 'i', and "solar" in blue. The background is a blurred field of yellow flowers and green foliage. In the top right corner, there are several semi-transparent white and light green circles of varying sizes.

Trinasolar

**Smart solar energy solutions for a
net-zero future**

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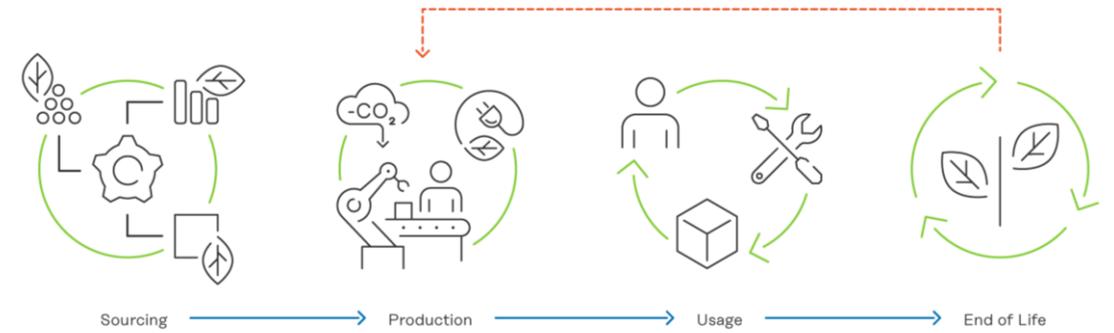




Life Cycle Assessments GEN24 Plus & Tauro

Fronius International, Sophia Schwarz, 2023/12/07, Information Class: Public





- Fronius **R&D department** projects
- The total life cycle of the **GEN24 Plus & Tauro ECO** was closely examined
- Life cycle phases: **Raw materials – Production – Transport paths – Utilization phase – Recycling phase**
- Official Review by  **Fraunhofer**
IZM

Life Cycle Assessments

Why are we doing LCAs?



Ecodesign for Sustainable Products Regulation

The new regulation will improve EU products' circularity, energy performance and other environmental sustainability aspects.

France launches 700 MW tender for large-scale PV

Solar project developers in France will have until June 25, 2021, to submit their bids. Under new rules, the selected PV projects must use modules manufactured with a low carbon footprint.

FEBRUARY 19, 2021 GWÉNAËLLE DEBOUTTE

HIGHLIGHTS MARKETS UTILITY SCALE PV FRANCE

Improved product development

- **Steady optimization** of the product portfolio
- **R&D department** is part of **every product development**
- Best practice: **re-manufacturing of used aluminum heat sinks** in the repair center

Countering greenwashing

- **strong media presence** of greenwashing e.g. AUA, Deutsche Bank's DWS,...
- **Evidence based sustainability (LCA) is required to avoid greenwashing**

Prepared for future requirements

- **Changing market requirements**
 - Ecodesign (EU commission)
 - Environmental Labels
 - Repair index (France)
 - Tenders require footprint data more often

How we did it ?

Data Quality - Key for a good LCA

LCA for GEN24 Plus

- 490 components and 2 533 individual parts



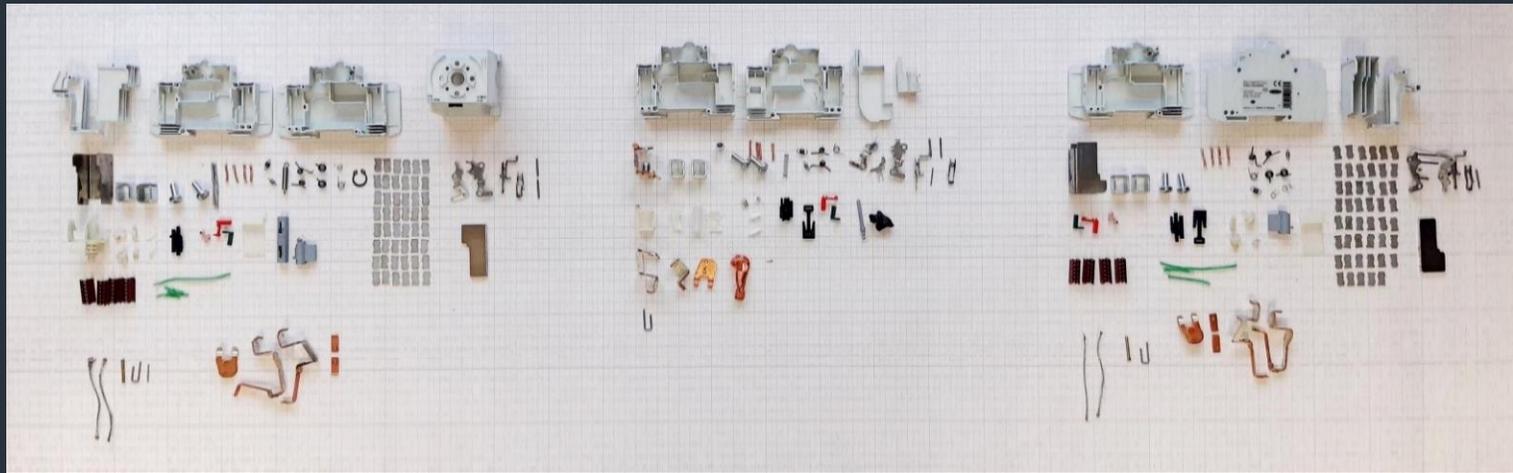
- 4 inverters * 7 countries * 5 waste scenarios = 140 variants for each result value

- 120 result values * 140 variants = 16 800 results



How we did it ?

LCA for Tauro



- Detailed data collection of 960 components
- Treatment of semiconductor and gold components in concentrated sulfuric acid for weight determination
- Adaptation of an official database (ecoinvent) on the basis of the Fronius investigations



- 2 inverters * 7 countries * 5 waste scenarios = 70 variants for each result value
- 120 result values * 70 variants = **8 400 results**



What is the outcome ?

Summary of the results

The payback time of climate impacts is in the range of

0.6 – 3.0 years (Tauro)

0.7 – 3.3 years (GEN24 Plus)

up to

6 658 890 kg (Tauro)

516 332 kg (GEN24 Plus)

CO₂-e are saved with a PV system with a Fronius inverter → up to 3 026 flights from Vienna - New York (Tauro)



The environmental benefit exceeds the impact by a factor of

10 – 52 times (Tauro)

9 – 45 times (GEN24 Plus)

The results refer to PV system incl. inverter

We are Fronius.

We inspire
mind-opening solutions.

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Time to vote!

1. Retrieve your unique voting token received at registration
2. Go in front of the registration desk and look for the voting boxes
3. Insert your token for your preferred nominee
4. Deadline to vote until **5:00 PM**
5. Stay tuned for the sustainability award winners!