PV CYCLE

ANNUAL REPORT 2023

PV CYCLE

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Jan Clyncke

Managing Director

1: INTRODUCTION

The past year marked ten years of being under the scope of the WEEE Directive 2012/19/EU and the last year of the von der Leyen European Commission, whereby the Green Deal has been one of the major achievements.

Under this Green Deal, the Commission started in 2023 the evaluation of the 2012 WEEE Directive. We have submitted in extenso our evaluation whereby our main conclusion after ten years is that we do not question the policy instrument 'Extended Producer Responsibility'. However, the instrument which is used – the WEEE Directive – is not the appropriate one for photovoltaic panels. PV CYCLE is in favor of a dedicated legislative act which only deals with all Renewable Energy Equipment – such as windmills, solar thermal, geothermal, photovoltaics – and whereby equipment, which is vital for households and businesses, which has a very long lifetime and which generates electricity instead of consuming this, has the right for a proper impact assessment of the notion of Extended Producer Responsibility for this kind

of equipment and products. Renewable Energy Equipment and products avoid waste and costs for the society for many years. Photovoltaic panels, windmills and many other Renewable Energy Equipment have proven to be vital in our economy during times of geopolitical tensions and war. We invite you to consult our detailed WEEE Evaluation paper on our website.

Internally our organization, we have used the past year to pave the ground for several activities which you shall discover this and the following years.
Therefore, we have strengthened our team in Brussels, Germany and Italy. In the UK, we have enabled many opportunities since our physical presence established by the end of 2022.

Regarding our operational results, PV CYCLE has collected roughly the same amount of photovoltaic panels as the previous year. We also continued financing the coordinator within IEC, TC 82, who puts together with more than 30 worldwide technical experts, the drafting of a Technical Report related to the (preparation for) reuse of photovoltaic panels. The objective is to deliver the final version of this report by the end of 2024.The next step is to enable the draft of a global Norm or Technical Specification related to the preparation for reuse of photovoltaic panels.

Lastly, PV CYCLE continues its role of searching for and creating cooperations in many forms around the globe in order to offer to any company active in selling or installing photovoltaic panels, an environmentally sound recycling and waste treatment solution not exceeding excessive costs.

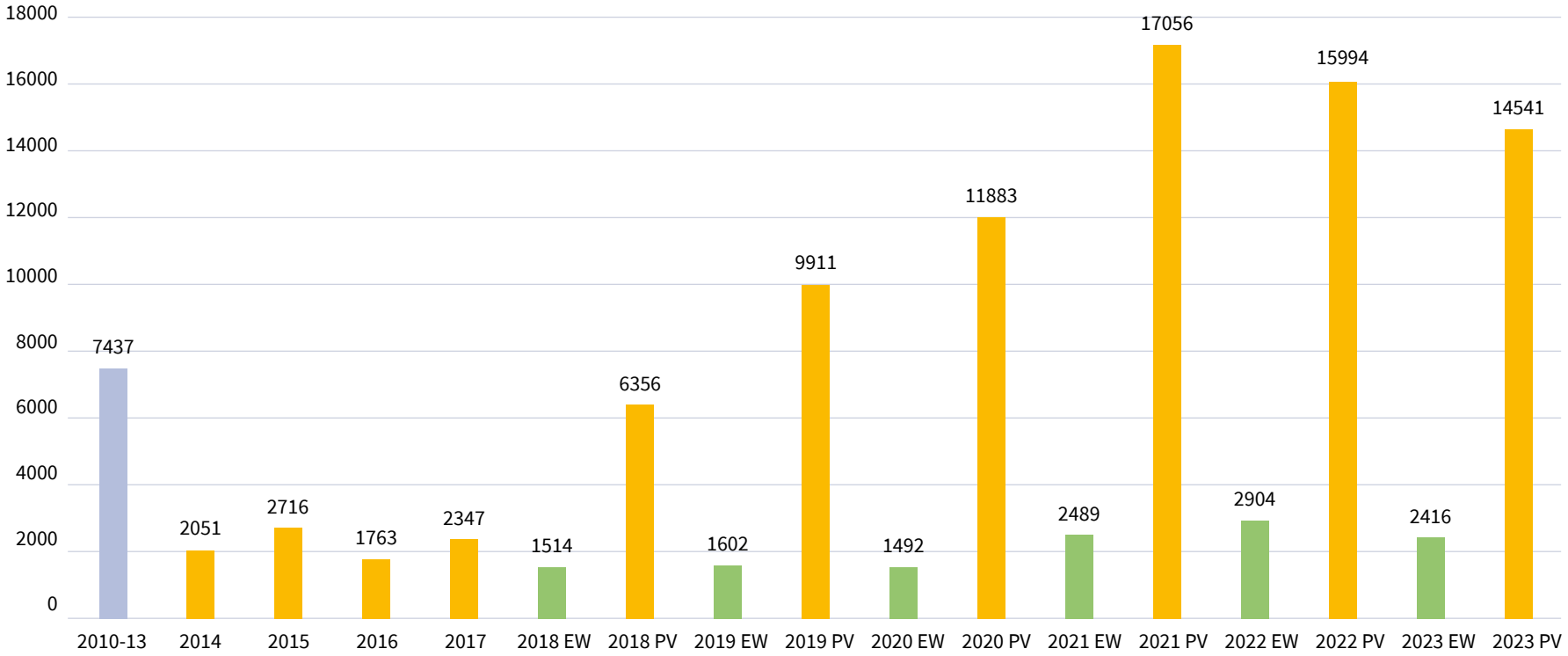
I wish you on behalf of our team and our board a great reading of our Annual Report.

Jan Clyncke
Managing Director

2: OPERATIONS REPORT

During the year 2023, PV CYCLE processed **14.541 tons** waste generated from photovoltaic power systems, of which **2416 tons** of batteries and other WEEE in Italy.
The majority of the photovoltaic panels treated in 2023 were **silicon-based**.

TOTAL COLLECTED TONNES PV PANELS 2011-2023 : 92.055 TONNES - +/- 1,5 GW



General analysis of the collected tonnes of PV Panels

The overview above of our collected tonnes of photovoltaic panels throughout the European Union and the United Kingdom, has not a straightforward structure because of the following elements:

- PV Panels have a very long lifetime with a product guarantee of 10 years and a performance of 20 years; Cumulative installed PV capacity in the European Union including UK was 50 GW at the end of 2011, 100 GW at the end of 2016 and 200 GW at the end of 2022; this shows that the first 100 GW milestone is only 8 years old and hence taking into account the long lifetime, PV Panels waste is not generated that fast as for example packaging waste;

- During the first decade, the main reasons of generating PV Panels waste were (and still are) caused by transportation and installation damage, by warranty issues, by heavy weather conditions more and more triggered due to Climate change effects; hence, very low amounts of tonnage and not comparable with at a normal replacement market with e.g. a 5 years' cycle;

- Only since 2014, there are Extended Producer Responsibility obligations in place for PV Panels; The existence (and fading out) of subsidy mechanisms (Feed-In-Tariff, energy funds, tax relief schemes, …), some of them guaranteed during 15 years;

- PV Panel Systems are an investment product which is not comparable with fast-consuming products such as packaging (waste) or a large number of e-waste;

- In most European countries, there is - in tonnage - a larger amount of large PV Power plants (commercial, industrial rooftops, utility scaled installations,…) installed which have as main objective to generate electricity and income for the operator of these PV Systems (investment product) and hence the driver of generating waste is absent;

- When large PV Power plants are disposed of, we then collect a huge amount of an ‘one-shot’ tonnage; when for example a 10 MW PV Power plant is removed due to a warranty issue or due weather damage, this one time collected amount represents average 700 tonnes which will not occur the next year or years due to the investment character of the PV Panels and the guaranteed product and performance guarantees;

Even when the list of reasons is not exhaustive, the list shows that the behavior of photovoltaic panels and their generation of waste is unpredictable and has nothing in common with classical commodity products and equipment such as packaging waste (beverages e.g.), many of the electrical and electronic equipment (toys, toothbrushes, laptops,…) where the amount of waste generated and collected is increasing each year. Main conclusion is that photovoltaic panels are preventing waste – the first step in the waste hierarchy – for many years. Unfortunately, the EPR-legislations around the world do not yet define ‘prevention to waste’ targets but continue to define linear and increasing collection targets without acknowledging products such as photovoltaic panels.

3: PV CYCLE IN THE WORLD

During the past year, PV CYCLE has continued to play a leading role in adapting waste management practices of photovoltaic panels to global regulatory and environmental realities. Faced with a constantly evolving European regulatory framework and major political and economical challenges, it is very harsh to harmonize our activities with the requirements of the WEEE Directive (Waste Electrical and Electronic Equipment).

Photovoltaic panels, while beneficial for green energy production, represent unique collection and recycling challenges, distinct from traditional Electrical and Electronic Equipment (EEE). Unlike EEE, which tend to have a short life cycle and consuming electricity , solar panels are designed for significant longevity, only become waste after several decades and are a vital product for households and businesses during an energy crisis; moreover, photovoltaic panels generate electricity. These particularities mean that we continue insisting on these and a dozen of other differences with EEE in order to best meet the challenges that lie ahead.

In response to the challenges of Producer Responsibility, we have initiated discussions within the industry and with the regulators to review the regulatory instrument for Extended Producer Responsibility (EPR) applicable to energy-generating equipment. Our aim is to steer EPR-legislation which fits to all Renewable generating Energy Equipment instead of being under a fast-consuming Electrical and Electronic Equipment EPR regulation. A tailor-made EPR framework for all Renewable Energy Equipment respects the vital role of this equipment in the energy mix and shall reflect much better the EPR-obligations for products with a longevity, generating electricity and being a key component in our society.

Last year, PV CYCLE expanded its influence, working with various countries to establish and adapt guidelines that meet both local needs and international standards. We consolidated our presence in Europe while expanding our activities to the East, where the emerging photovoltaic markets realize that the huge amount of installed photovoltaic capacity requires a waste management solution.

Once again, we have demonstrated during 2023 our commitment to a sustainable future through our ability to anticipate regulatory changes and to align our operations along them.

PV CYCLE remains at the forefront of the waste management and compliance transition, ensuring that everyone realizes the huge contribution of photovoltaic panels towards preventing waste and to avoiding costs for the society and at the same time enabling Best Available Technologies Not Exceeding Excessive Costs for the waste treatment of photovoltaic panels.

In short, PV CYCLE is determined to strengthen its recycling initiatives and promote global environmental responsibility and enabling circular thinking within the solar industry.

4: FINANCIAL REPORT

Below you find the consolidated financial statement of the PV CYCLE Association.
Our financial report has been audited and approved by Baker Tilly Belgium.

SUMMERY 2023 BALANCE SHEET

in 1000 EUR

Assets	2023 Conso HQ
Fixed Assets	**342**
- Intrangible assets	241
- Tangible assets	1
- Property, plant & equipment	
- Furniture & vehicles	
- Other tangible assets	
- Financial assets	80
- Amounts receivable > 1 year	20
Current assets	**9560**
- Cash at bank & in hand	6663
- Amounts receivable < 1 year	2874
- Deferred charges and accrued income	23
TOTAL ASSETS	**9902**

Liabilities	2023 Conso HQ
Capital and reserves	7058
Exchange Consolidation Adjustment	
Result of the year	1526
Equity	**8584**
Amounts payable	**1318**
- Amounts payable < 1 year	1167
- Amounts payable > 1 year	23
- Accrued charges and deferred income	128
TOTAL LIABILITIES	**9902**

SUMMERY 2023 P&L

in 1000 EUR

	2023 Conso HQ
- Turnover	5263
- Services and miscellaneous goods	-3171
Gross operating margin	**2092**
- Remuneration, social security and pensions (-)	-498
- depreciation intangible and tangible fixed assets (-)	-137
- Amounts written off stocks; contracts in progress and trade debtors (+) (-)	177
- Provisions for liabilities and charges (+) (-)	
- Other operating charges (-)	-64
Operating result	**1569**
- Financial income (+)	136
- Financial charges (-)	-82
Result for the periaod before taxes (+)	**1624**
- Various taxes (+) (-)	-97
RESULT FOR THE PERIOD (+)	**1526**

5: PV CYCLE & SOCIETY

Representing our members' end-of-life commitment towards society and the authorities, PV CYCLE also invests in public awareness campaigns and speaks at numerous European and international events every year.
We've had the opportunity to meet our customers and partners once again, and to get a feel for how things are evolving from exhibitors at various exhibitions.

We were present at : INTERSOLAR – ECOMONDO – SOLAR STORAGE LIVE – InterSolution – Solar Solutions – Eucolight – Taiyang News - …

In addition, we continue to communicate without borders via our LinkedIn page, which we relaunched in 2023 and which now boasts over 4,000 members : https://www.linkedin.com/company/pv-cycle/.
To communicate with greater impact, we also revised our graphic identity in 2023.
And we have relaunched our newsletters to our members.
In 2023, we had our follow-up ISO 9001 & ISO 14001 certification. We are obviously proud to be able to continue working according qualitative and environmental standards.

Regarding the topic of reuse of photovoltaic panels, we highlight towards the society that in 2023, PV CYCLE continued alone to finance the costs of the Coordinator preparing the Technical Report within the IEC Standardization organization with the objective of having one day an accountable standard for the reuse, reusability of photovoltaic panels.

PV CYCLE aisbl
Boulevard Brand Whitlocklaan 114/5 – Floor 6
B – 1200 Brussels

VAT BE0893.027.827
T : +32 (0)2 880 72 50
info@pvcycle.org
www.pvcycle.org