



**Providing a cost-efficient and
adequate solution for end-of-life PV modules**



Outline

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- 2. Mission and Objectives**
- 3. PV CYCLE Members**
- 4. PV CYCLE Operational Scheme**
- 5. Activities Report**
- 6. Future actions**



1. Introduction to PV CYCLE

Who We Are:

- Founded in July **2007** by PV manufacturers
- Pro-active initiative: Born as **voluntary approach**
- Established and staffed office in Brussels in April **2008**
- Today representing more than **90%** of European PV market



2. Mission and Objectives

- **Implement** the producer responsibility for the members
- **Organize** the Take-back and Recycling of End-of-Life PV modules in EU + EFTA
 - Transport & installation damaged
 - Guarantee / warranty cases
 - Discarded by the end user
- Use **economies of scale** for a cost efficient system



2. Mission and Objectives - Our Commitment

- **Scope:** PV Modules from our Members and PV Modules from companies which were bankrupt before 1 January 2011
- **Geographical scope:** EU + EFTA countries
- **Collection rate:** 85% of EOL-PV Modules arising
- **Recycling rate:** 80% by 2015
85% by 2020
- Set-up of **fixed** collection points **for small quantities**
- Set-up of **ad-hoc** collection points **for large quantities**
- **Targeted number** of collection points: 1 CP/5 t/Year
- **Financing:**
 - **2 years** secured financing within PV CYCLE
 - **Long term guarantee** to be established by October 2012
- Finalizing the **Monitoring Committee**
- Independent **monitoring** and **reporting**



3. PV CYCLE Members

join@pvcycle.org

Full members:

- all manufacturers
- all importers
- companies which are reselling under their name
- companies which trademark PV modules manufactured by other supplier

Associated members:

- all associations
- all research institutes
- all wholesalers
- all system integrators
- all electrical installation contractors
- all cell manufacturers



3. PV CYCLE Members

Number of Members

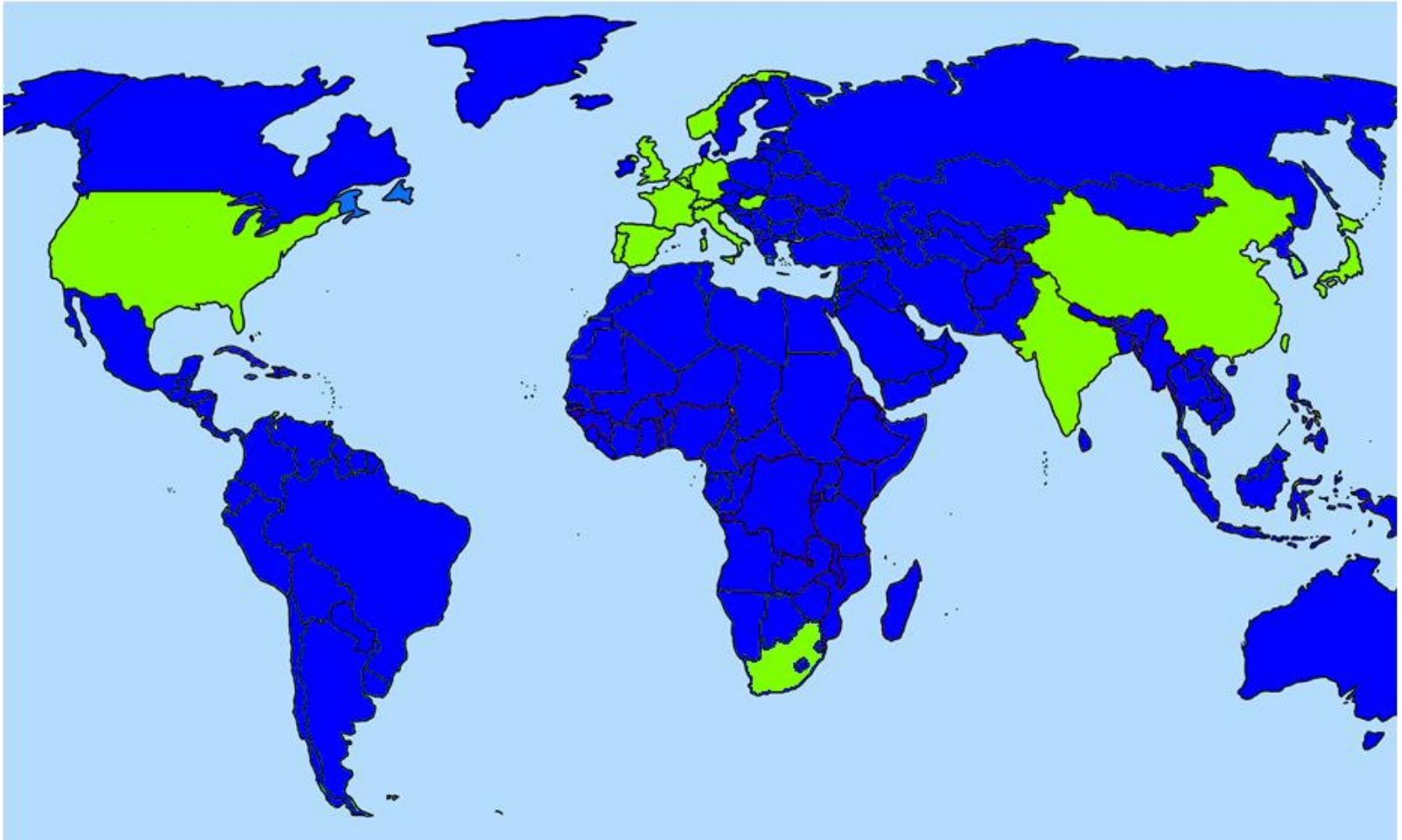


Current Situation:

203 Full Members

26 Associated

3. PV CYCLE Members - Origin



 Headquarter countries of PV CYCLE Members



3. PV CYCLE Members – Financial obligations

Full members:

- **Annual Membership fee:** to cover administrative costs. Based on the previous year turnover on PV modules in EU 27 and EFTA.

| <u>Turnover previous year on PV modules in Europe</u> | <u>Membership fee</u> |
|-------------------------------------------------------|-----------------------|
| < 50 million EUR | 5 000 EUR |
| 50 – 99 million EUR | 10 000 EUR |
| 100 – 199 million EUR | 20 000 EUR |
| > 200 million EUR | 25 000 EUR |

- **Annual Contribution fee:** to cover operational costs. Based on tonnes sold in EU 27 and EFTA countries the previous year. Calculated as follows:

*Tonnes sold the previous year in EU27 + EFTA * operational costs * X factor*

- **Long term financial guarantee:** as of October 2012 the latest.
- Only for NEW Members joining in 2012: extra fee to cover the start-up costs: 5.000 €



3. PV CYCLE Members – Financial obligations

Associated members:

- **Annual Membership fee:** Based on the previous year turnover.

| Turnover previous year | Membership fee |
|--------------------------------------------------------------------------------------|----------------|
| Electrical installation contractors, associations, research institutes | 1 000 EUR |
| Wholesalers, distributors, project developers, system integrators, cell manufacturer | 5 000 EUR |

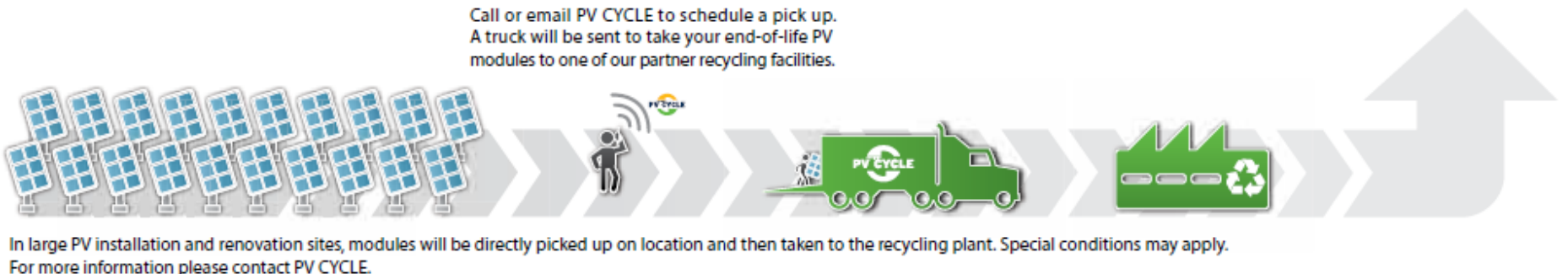


4. PV CYCLE Operational Scheme

SMALL QUANTITIES < 30 – 40 MODULES



LARGE QUANTITIES > 30 – 40 MODULES



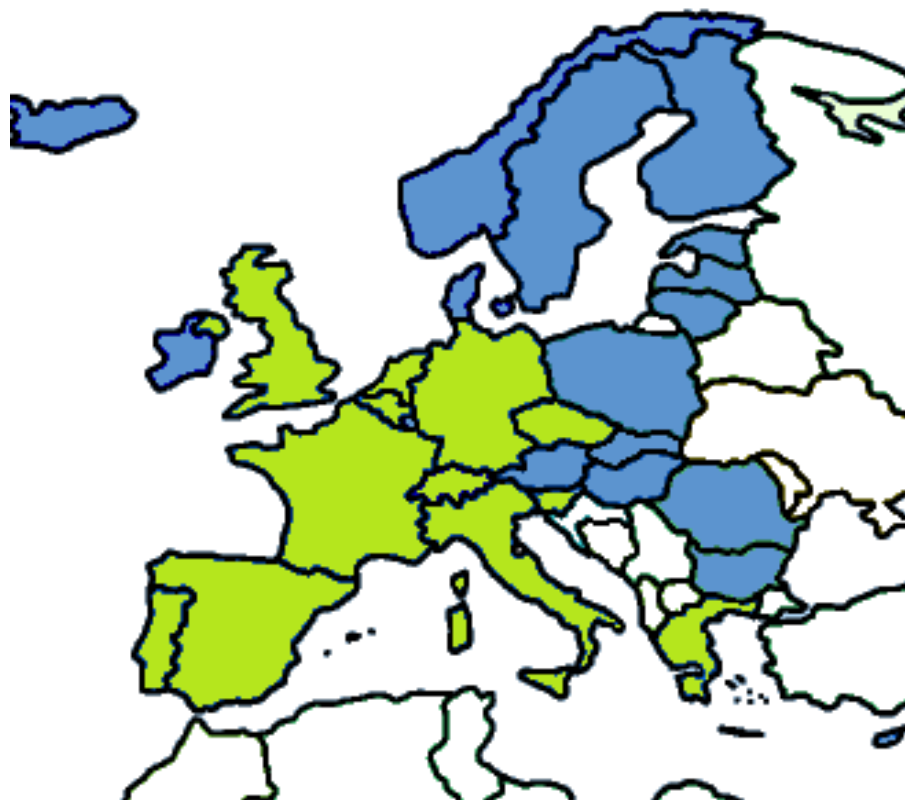


4. PV CYCLE Operational Scheme

Certified Collection Points

| | |
|-----------------|----|
| Germany | 69 |
| Italy | 43 |
| France | 25 |
| Belgium | 10 |
| Spain | 8 |
| UK | 6 |
| Greece | 5 |
| Czech Republic | 2 |
| The Netherlands | 2 |
| Switzerland | 1 |
| Portugal | 1 |
| Slovenia | 1 |

Total Certified 173



*As of end September 2011

Locate your closest Collection Point at:
www.pvcycle.org



4. PV CYCLE Operational Scheme

Benefits of becoming a certified Collection Point (CP)

- Extra and **differentiating service** to your customers
- **Certificate** from PV CYCLE
- **Listed** in the PV CYCLE website as a partner
- **Marketing** material
- Use of the **PV CYCLE logo**

Requirements to become a certified Collection Point (CP)

- **Signature** of the CP Contract
- **Space** for two receptacles in a safe location: **Silicon** based & **non-Silicon Thin-Film** based [1.820 x 1.200 x 1.190 mm]
- **Accept** end-of-life photovoltaic modules from PV CYCLE's members
- **Contact** PV CYCLE for the pick-up when the containers are full

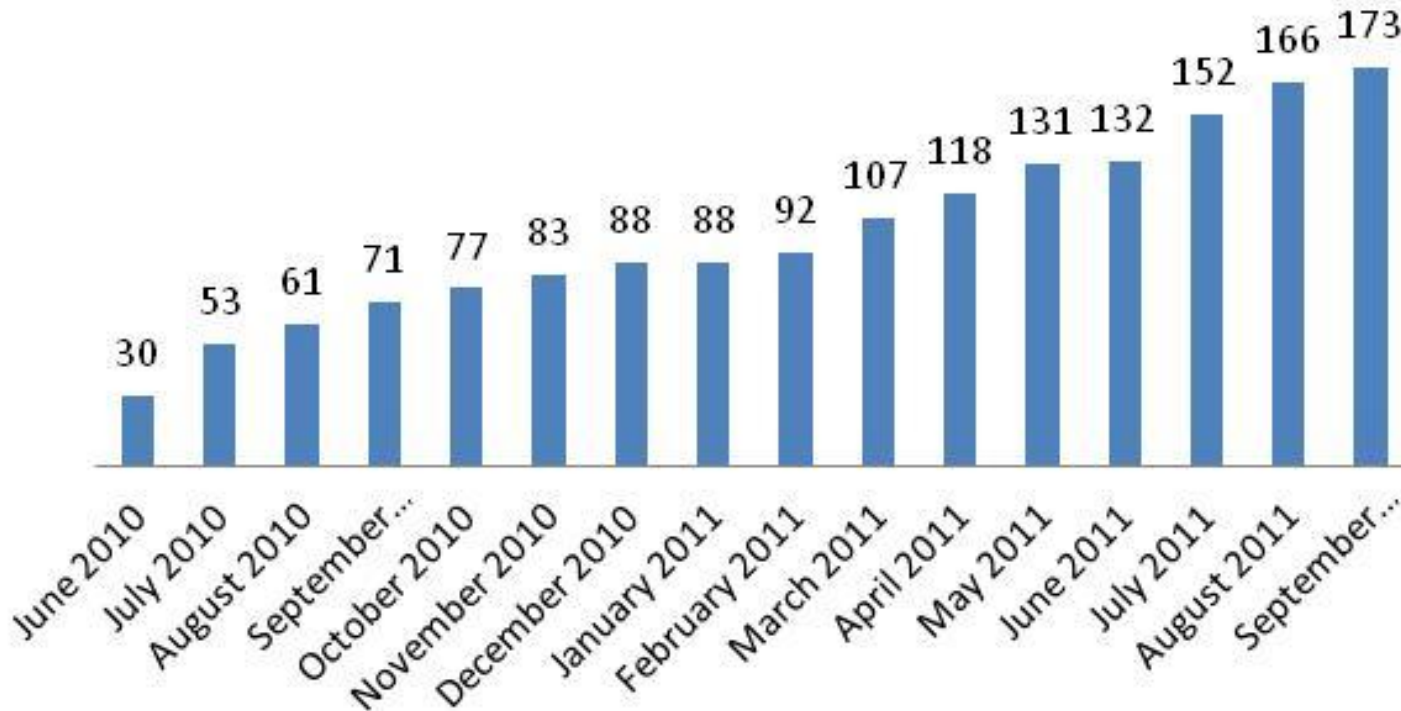


4. PV CYCLE Operational Scheme

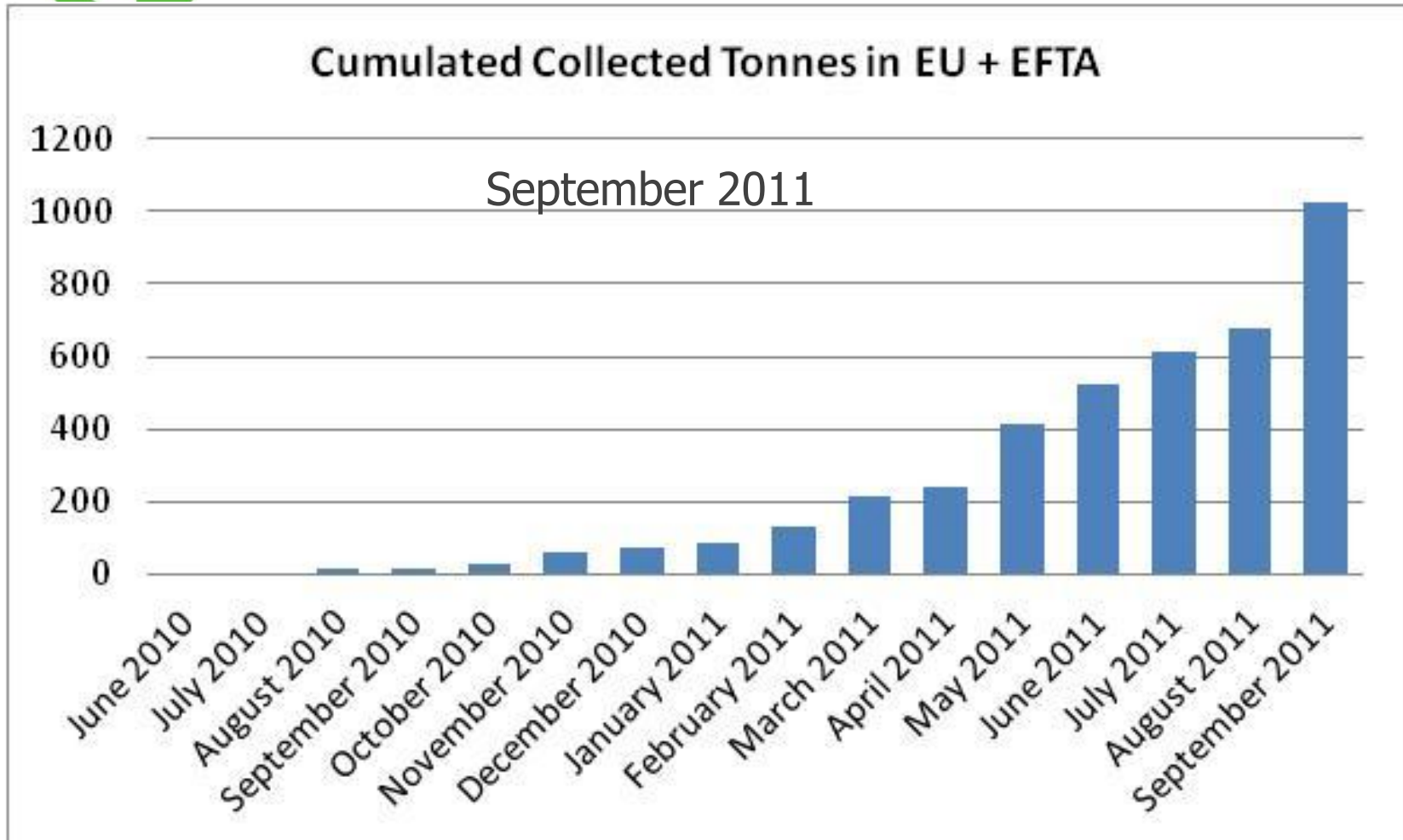
Express your interest to become Collection Point at:
www.pvcycle.org

Become a
PV CYCLE
Collection Point

Number of Certified Collection Points



4. PV CYCLE Operational Scheme

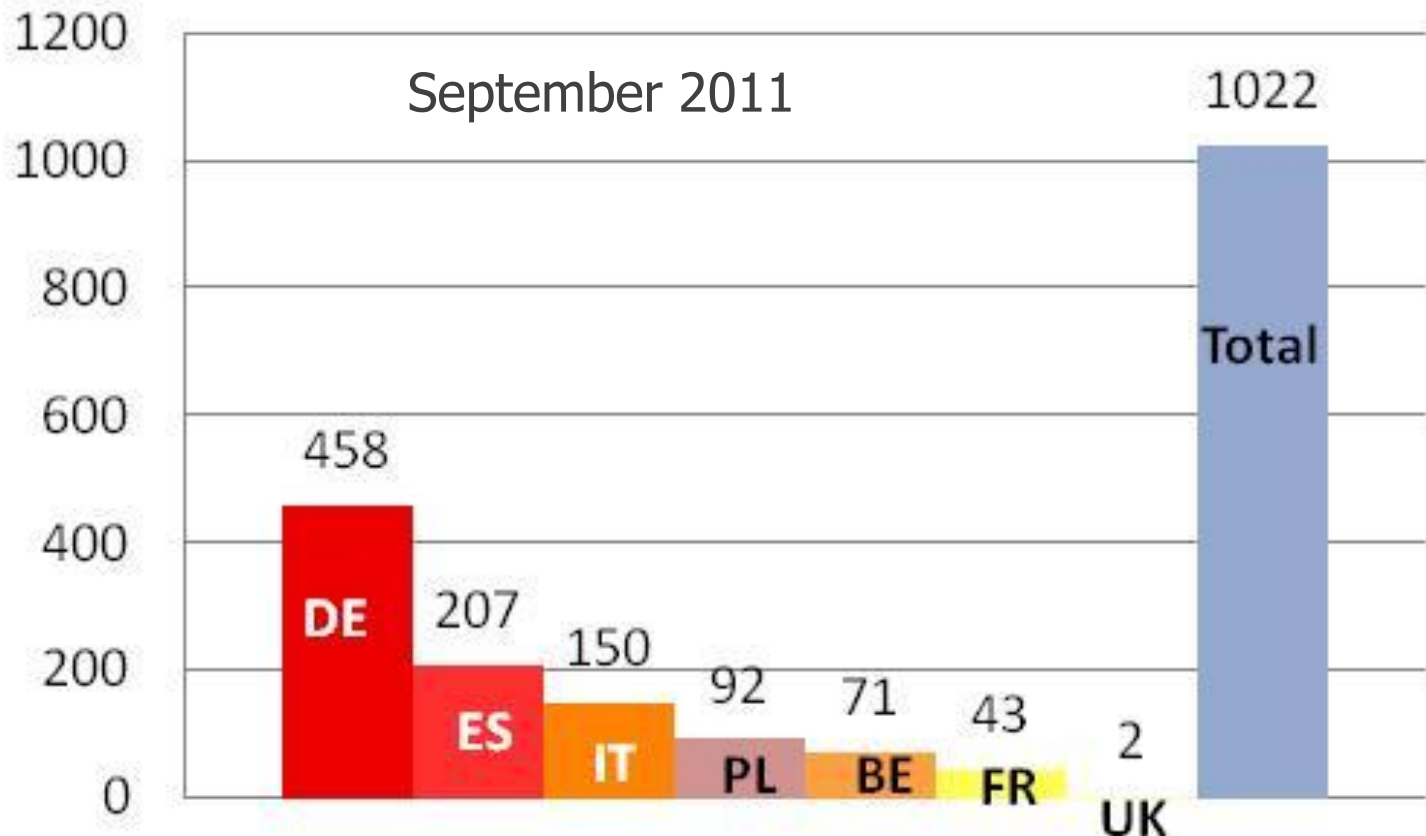


Collected tonnes since the beginning of the operations, June 2010 by the Collective System
Not including individual system's figures



4. PV CYCLE Operational Scheme

Collected Tonnes per Country



Collected tonnes since the beginning of the operations, June 2010 by the Collective System
Not including individual system's figures



5. Activities Report

- **First collection point** opened in Germany June 2010
- At the end of September **173** collection points were established and operational in 12 different European countries
- **1,022 tonnes** of EoL PV Modules entered the PV CYCLE's Collective System for the recycling
- Start of cooperation with credited **flat glass recyclers** in different European countries for silicon based modules
- Start of cooperation with **start ups** for non silicon based thin film modules
- **Annual Report 2010** has been published and it is available at www.pvcycle.org



6. Future Actions

- **Expansion** of the Collection Network
- **Communication** campaigns
- Finalizing the **Monitoring Committee**
- Improvement of the **recycling technologies**
- Continue developing a **cost efficient** system



Thank you for your attention!



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