

# Putting the metrics behind sustainability at Wecycle.



## Wecycle



### Monitoring of e-waste recycling in the Netherlands

#### The Challenge

Wecycle organises the collection and recycling of used electrical equipment and broken energy efficient lighting (e-waste) in the Netherlands. Wecycle was interested to understand the environmental benefits of their recycling activities and asked PRé to measure the annual environmental performance caused by e-waste recycling.

The objectives of the study were to measure the total environmental and climate change performance of e-waste recycling:

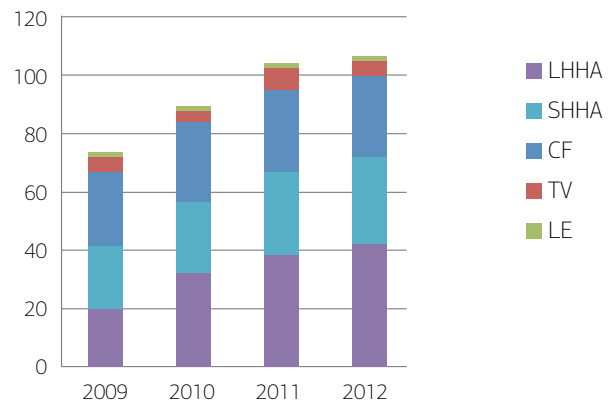
- Expressed per recovered material (type). Included materials are aluminium, copper, iron, zinc, glass and plastics;
- Expressed per e-waste category which are large household appliances, small household appliances, cooling and freezing appliances, TV's, energy saving light bulbs and ICT appliances;
- Caused by the removal and destruction of (H)CFC's<sup>1</sup> contained in cooling and freezing appliances.

#### PRé Solution

PRé requested detailed information on the recycling activities for each e-waste category from Wecycle. All of the recycling activities, such as shredding and separating, were then thoroughly modelled in the LCA software SimaPro, to assess and account for the burdens of recycling. The recovered materials such as aluminium were compared with the virgin materials they displace to estimate the benefits of material recycling. The (H)CFC's removed by Wecycle from cooling and freezing appliances were calculated and analysed separately but with using the same methods. The incineration of (H)CFC's was taken into account as a recycling activity. The analysis was conducted using the ReCiPe endpoint method for calculating the total avoided environmental impact and the IPCC2007 method for calculating the avoided climate change impacts. PRé calculated the results per selected e-waste category and per recycled material and for (H)CFC's removal.

<sup>1</sup> CFC's or chlorofluorocarbons are a group of man-made compounds containing chlorine, fluorine and carbon and used as cooling agent and applied in insulation foam in cooling and freezing appliances. CFC's are known for their high ozone layer depletion capabilities and their high contribution to global warming. CFC's were replaced by Hydro chlorofluorocarbons (HCFC's) which are less persistent but still have a strong environmental impact. The Montreal Protocol of 1987 led to a phasing out of CFC's in 1995 and HCFC's in 2020.

Avoided climate change impact (kiloton CO<sub>2</sub>-eq)



Wecycle monitoring results, per e-waste category

The first assessment was performed with data from 2009 and PRé has since been updating the results every year and tracking environmental performance progress. PRé combined the results of the initial study and the ongoing monitoring studies in a report for external communication by Wecycle.

#### Business Value

- Awareness generation on environmental performance progress, helping to drive and inspire consumers. Wecycle aims to collect as much e-waste as possible and would like to stimulate consumers to dispose of their e-waste through the appropriate collection channels such as (electronics) shops and municipal collection points. By being transparent about collection, recycling efforts and associated environmental consequences Wecycle hopes to increase e-waste collection.
- Stakeholder engagement driven by transparent communication. Wecycle communicates to each of its affiliated municipal collection points how much greenhouse gas emissions are prevented per year by e-waste recycling. This stimulates these municipalities to improve their collection rate.
- Insight into process, allowing for efficiency improvement. The results gave insight into the importance of e-waste recycling and identified some points for improvement regarding recycling efficiency.



## Creating Business Value Through Sustainability Metrics

### Sustainability Metrics Consulting

Sustainability in business has become a core business concern and a driving factor in creating business value. PRé offers a range of consulting services, provided by a team of experts who will work with you to choose, create and deliver the right metrics for your sustainability goals.

### **PIONEERING** Developing Innovative New Metrics For New Challenges

Societal and stakeholder expectations for implementing sustainability in business are becoming more demanding. Sometimes, off-the-shelf metrics cannot help you answer their questions. PRé has extensive experience in life-cycle-based metrics pioneering: implementing cutting-edge new product metrics and developing completely new, scientifically sound and robust metrics. PRé has been the driving force behind many ground-breaking initiatives like ReCiPe or the Handbook for Product Social Impact Assessment.

### **INTEGRATION** Integrating Sustainability Metrics In Your Business

To create business value from sustainability, your business needs to integrate sustainability metrics across its business functions. You can't improve what you can't measure. PRé has the expertise required to help you choose the right metrics and to integrate sustainability into your day-to-day operations. PRé also supports you in increasing the efficiency of your LCA work and in empowering your LCA practitioners.

### **DELIVERY** Expert LCA Knowledge To Measure Sustainability Performance

LCA has proven to be a robust and science-based way to measure and communicate your sustainability performance. PRé can review your LCA studies, deliver EPDs, footprints and other metrics, and provide you with completely new LCA studies to measure your impact. Our consultants are renowned for their expertise in specific topics, such as impact assessment, uncertainty, normalisation, toxicity, social sustainability and databases. PRé offers training courses and in-house training that build a solid knowledge base to help you conduct LCA studies yourself.

**Get In Touch With PRé**  
We're always happy to discuss your sustainability challenges with you. If you have any questions, feel free to contact our offices in the Netherlands and the US.

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*We look forward to being your partner in putting the metrics behind sustainability.*

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### Those Who Have Gone Before – Market-leading Businesses That Are Creating Value From Sustainability Metrics

PRé has built a worldwide reputation as a leader on environmental and social impact assessment. We work with organisations and institutes such as the European Commission, European Space Agency, Heineken, BASF, Philips, L'Oréal and DSM.



### About PRé

PRé has been a leading voice in sustainability metrics and life cycle thinking, since 1990, pioneering the field of product and supply chain sustainability metrics. We've developed some of the world's most widely recognised and applied environmental impact assessment methods, as well as the world's leading LCA software, SimaPro. From the very first, we have not only focused on developing the science of LCA, but also its application – helping companies create value by using state-of-the-art measuring, monitoring and analysis methodologies to improve their sustainability performance.

Find out more about what we can do for your organisation at [www.pre-sustainability.com](http://www.pre-sustainability.com)

