

# REFURBED

growing the online market for refurbished electronics



## START-UP DETAILS

**Name:** Refurbed  
**Website:** [refurbed.de](http://refurbed.de)  
**Sector(s):** Refurbished Electronics / Retail Ecommerce  
**Established:** 2017  
**Location:** Vienna, Austria  
**Investment-to-date:** €2.5 million  
**Number of Staff:** 30

## Key messages

- Austria-based EIT Climate-KIC start-up refurbed is an online marketplace for refurbished consumer electronics, which cost up to 40% less than their new equivalents.
- Extending the lifetime of electronics decreases the demand for new products and the CO<sub>2</sub> associated with their manufacture, as well as mitigating the problem of e-waste.
- Policymakers and regulators can play a key role in driving the growth of the refurbished electronics sector through measures that simplify the handling of refurbished electronics.
- Creating an innovative platform is not, in itself, sufficient to guarantee the transformation of existing production systems; to do so requires support from other system elements (in order to, for example, create consumer awareness and build new markets).

## Introduction

Up to 80% of the lifetime CO<sub>2</sub> footprint of a personal computing device is produced during its manufacture – around 44 kg of CO<sub>2</sub> for an iPhone 7, for example (1,2). At the same time, the rapid development of new product models, in combination with the lack of support for older models, is leading to an increase in consumer demand for electronics, as well as the amount of electronic waste (e-waste) we produce.

In 2016, 44.7 million metric tonnes (Mt) of e-waste – consisting mostly of plastics, metals and rare earth metals – was produced globally, of which just 20% was recycled (3). By 2021

it is predicted that global e-waste will have increased by a further 17%, making it the fastest-growing category of domestic waste (4).

The circular economy approach of extending the lifetime of electronic and electrical equipment (EEE) is one way of tackling the demand for new products, the greenhouse gas emissions associated with their manufacture and the problem of e-waste. The circular economy refers to a restorative economic model, which seeks to extend the life of products, components and materials by keeping these in use within the economy for as long as possible. Circular strategies include, but are not limited to: eco-design, re-use, repair, refurbishment, remanufacturing, product-service systems and recycling.

Consumer demand for refurbished electronics is on the rise. This refers to used items, such as laptops, tablet computers and smartphones, which have been completely renewed and tested by specialist refurbishers to ensure they look and function like new. The market for refurbished phones, for example, is predicted to grow by 10% year-on-year up to 2022 (5). Reducing demand for new electronics lowers demand for critical raw materials (CRMs) – such as silver, gold, platinum and rare earth metals – used to produce electronics (6). CRMs are scarce and mined outside the EU, thus posing supply risks, which increased recovery from electronics could help mitigate (7).

Vienna-based EIT Climate-KIC start-up refurbed, established in early 2017, is an online marketplace stocking over 3,000 models of refurbished electronic devices. By the end of 2018, the company – currently operating in Austria, Germany, Poland and Italy – had sold more than €7.5 million worth of products. In 2018 refurbed was named one of EIT Climate-KIC's top 30 European clean-tech start-ups and was a runner-up at the Climate-Impact Battle. In 2019, two of refurbed's co-founders, Peter Windischhofer and Kilian Kaminski, were nominated for the Forbes 30 Under 30 (8). Building on these successes, refurbed has ambitious plans for further expansion across Europe in 2019.

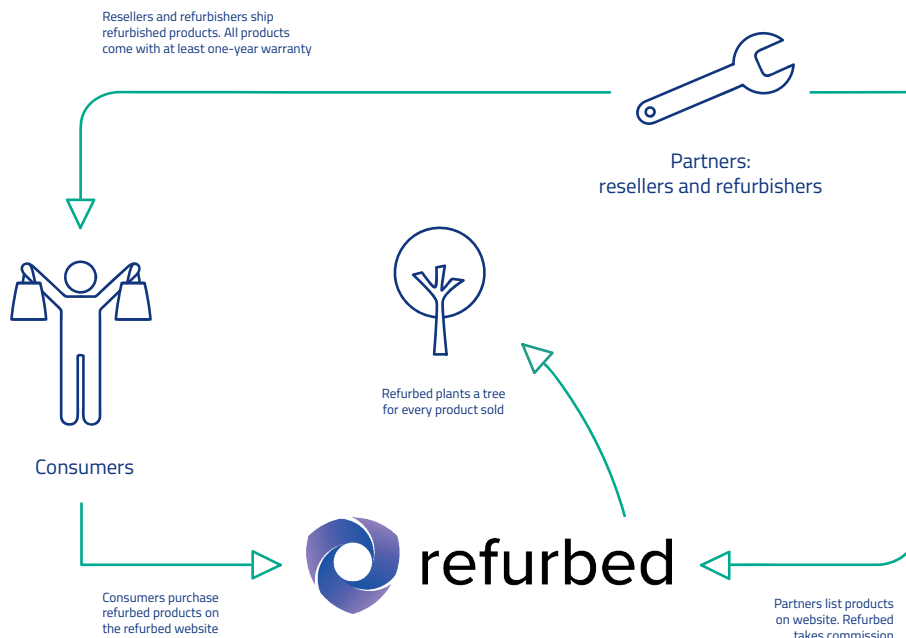


Figure 1: overview of refurbed marketplace value chain

## Refurbed's business model

Refurbed's goal is to make refurbished electronic products more visible and easier for customers to find and buy with confidence. According to refurbed, the products sold on their platform are up to 40% cheaper than their new equivalents. Refurbed is a prime example of how digital platforms can make it easier for consumers to engage with circular alternatives (9).

Refurbed provides an online marketplace where refurbishers and refurbished product resellers can list their offers for refurbished electronics. When a buyer comes looking for a product, the refurbed platform compares offers and shows the best available option. All products come with at least one-year warranty. Customers can also buy insurance to protect against accidental damage (see Figure 1) thanks to refurbed's partnership with ERGO Direkt (10), a large German insurance company. This partnership resulted from an introduction made through EIT Climate-KIC's Accelerator programme in 2017. Refurbed also offsets the CO2 emissions created during the refurbishing process by planting a tree for every device sold (see Figure 2).

While refurbished products are widely available, refurbed believe their exclusive focus on this category is what differentiates them from competitors like Ebay and Amazon. In contrast to these platforms, where refurbished products are sold side-by-side with new and used products, on the refurbed platform – which looks and functions like a typical online retail store – only refurbished products are marketed. Refurbed believes the clarity of their offer creates added value for their over 50 existing partners (refurbishers and resellers), as it

leads to fewer returns and complaints, resulting in greater profits all round.

To facilitate the marketplace's backend, refurbed invested significant time and resources in coding a brand-new, high-speed proprietary e-commerce platform. The company claims that they are the fastest marketplace in Europe. The team considered licensing this software but believes there is greater long-term value in holding onto this edge in performance.

Refurbed derives its income from commissions paid by resellers and refurbishers on each item sold and from each insurance policy they sell.

### The refurbed difference



Figure 2: Benefits of refurbed's business model © refurbed

## System Conditions

With climate change requiring urgent and concerted action, there is a need to reconfigure and transform our economies and societies. Innovative business models alone will not live up to the mark as they are not guaranteed access to market; it is often the surrounding environment that proves decisive on whether an innovation will flourish or perish. This is because the innovation is a part of a wider system and influenced by key system elements, such as: Policy, Skills, Behaviour, Market Structures, Information Flows, Organisational Governance and Finance. Innovation needs to happen on all these fronts ('systems innovation') in order to achieve substantial system transformation.

## Refurbed: Enablers

### Access to Finance

In 2016, the Austrian Government began to offer more support and funding for start-ups; for refurbed, this translated into an injection of public funding early on. This absolved its owners from having to hand over any equity while their company was in its infancy.

In 2017, they successfully attracted an initial round of capital of €350,000 from business angel investors. Refurbed's CEO Kilian Kaminski believes this was relatively easy to attract because refurbed had begun to make a name for itself in the region by actively applying for grants and entering pitching competitions.

By the end of 2018 refurbed secured a further €2 million in investments, predominantly through business angels and venture capital, to finance their expansion plans.

## Refurbed: Challenges

### Behaviour Change

The business started operations in Austria and Germany for two reasons. Firstly, because that's where refurbed's founders come from, and secondly, because consumers in the DACH region (Germany, Austria and Switzerland) tend to have a higher-than-average awareness of environmental sustainability. Regions with higher consumer awareness of the benefits of environmental sustainability are likely to be more receptive to business models that promote this.

Despite greater consumer awareness in this region, what the refurbished "label" means is not well understood by the general public. To address this, refurbed has concentrated on educating potential customers about the benefits of buying refurbished items and ensuring that their offers are competitive with those of other used-electronics retailers.

The firm uses a wide range of channels to engage with potential customers, including advertising through Google, Facebook and other social media sites. Central to their communication strategy is explaining the brand benefits so that customers have this in mind when they are looking to buy electronic items in the future. Understanding customer loyalty is also key to this strategy. Through customer surveys and feedback, refurbed have found that while most customers are attracted by the lower price and warranty guarantee, the sustainability benefits are what create brand loyalty. Referrals from existing customers also drive a significant percentage of new traffic to the site.

### Policy

Currently there is no internationally recognised set of quality standards for refurbished products. Standards give consumers greater assurance when buying an item, as well as providing a way to hold sellers to account if the product fails to meet them. Refurbed has created its own set of quality standards, which include product-specific guidelines determining how items must look and function. Partners who wish to sell through refurbed's platform must also provide comprehensive information on where they source their products and product samples. In addition to feedback from customers on its own site, refurbed also checks feedback about its partners left by customers on other marketplaces to anticipate and tackle issues proactively.

The EU's 2003 Directive on Waste Electrical and Electronic Equipment (WEEE) is another stumbling block for the refurbished goods market, as it treats all discarded electronics – including those sold onto refurbishers – as e-waste, because of the environmental and health hazards posed by some of their materials. For example, a used phone destined for landfill is being treated, from a regulatory point of view, the same as one being sent to a refurbisher – generating additional bureaucracy for refurbishers when shipping items across borders. Updated policies that recognise the difference could encourage the growth of the refurbished electronics market. "There is a huge potential for improvement," says Kaminski.



**Image 1:** The founding team of refurbed Jurgen Riedl, Peter Windischhofer and Kilian Kaminski © refurbed

## Conclusion and lessons learnt

Refurbed's goal is to make refurbished electronics more visible and easier for customers to find and buy with confidence. To achieve this, refurbed has made significant strategic decisions: investing early in creating its own e-commerce platform, increasing consumer awareness and focusing heavily on building its brand. The wider lessons they have learnt on their journey thus far:

- **Policymakers can drive the growth of markets for circular alternatives through the creation of quality standards and the redefinition of "waste".** Policymakers and regulators can play a significant role in promoting the refurbished electronics sector through measures that simplify the handling of refurbished products by professional refurbishers and resellers.

- **Circular ventures need to establish a clear market niche to compete with bigger established players.** The clarity of refurbed's offer is a key differentiator when it comes to making it easier for consumers to buy refurbished electronics. This translates into fewer returns and complaints and greater profits for refurbed and their partners. This in turn makes their platform more attractive to resellers and refurbishers.

- **Creating consumer trust in the benefits of circular alternatives is central to growing new markets.** Refurbed's focus on promoting the benefits of refurbished electronics to potential consumers is both a short-term and long-term strategy, generating sales at the same time as building brand recognition and consumer awareness in a young market.

Refurbishing electronic and electrical goods is central to accelerating the transition to a circular economy. Fast-growing intermediary platforms like refurbed contribute to the uptake of circular products, reducing e-waste and contributing to the mitigation of the emissions and raw material associated with standard linear manufacturing practices.

### About

EIT Climate-KIC is Europe's largest public-private partnership addressing climate change through innovation to build a net zero carbon economy. The Climate Innovation Insights are one of the most knowledge sharing prominent formats of EIT Climate-KIC since 2016. Building on innovation endeavours of EIT Climate-KIC start-ups and partner institutions, the Insights are intended to share learnings and provide a platform for reflection and discussion.

### We would like to thank:

- Series Authors: Simon Brandon and Dr Geraldine Brennan
- Series Editors: Dr Geraldine Brennan (CUSP Research Fellow, Middlesex University), Maria Loloni (EIT Climate-KIC)
- External Reviewers: Vasileios Rizos (Centre for European Policy Studies) and Catherine Weetman (Re-think Solutions)

### Disclaimer

The information contained in this paper is provided for general information purposes only. Views are those of the author and do not reflect the views of EIT Climate-KIC, unless stated. While care has been taken to ensure that the information is accurate, the publisher cannot accept responsibility for any errors or omissions, or for subsequent changes to details given. EIT Climate-KIC provides no warranties or representations as to the completeness, accuracy or suitability for any purpose of this paper's content, nor any other warranty of any kind, express or implied, including but not limited to, warranties of satisfactory quality, non-infringement or compatibility. All rights reserved. This paper is supplied for the information of users and may not be distributed, published, transmitted, reproduced or otherwise made available to any other person, in whole or in part, for any purpose whatsoever without the prior written consent of EIT Climate-KIC. © EIT Climate-KIC 2019

### Endnotes:

(1) Greenpeace (2017) Guide to Greener Electronics. Available from: <https://www.greenpeace.org/usa/wp-content/uploads/2017/10/Guide-to-Greener-Electronics-2017.pdf> (2) Apple (2016) iPhone 7 Environmental Report. Available from: [https://www.apple.com/environment/pdf/products/iphone/iphone\\_7\\_PER\\_sept2016.pdf](https://www.apple.com/environment/pdf/products/iphone/iphone_7_PER_sept2016.pdf) (3) Baldé et al (2017) Global E-Waste Monitor 2017 – Quantities, Flows & Resources, United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Vienna. [https://collections.unu.edu/eserv/UNU:6341/Global-E-waste\\_Monitor\\_2017\\_-\\_electronic\\_single\\_pages\\_.pdf](https://collections.unu.edu/eserv/UNU:6341/Global-E-waste_Monitor_2017_-_electronic_single_pages_.pdf) (4) Baldé et al (2017) Global E-Waste Monitor 2017

– Quantities, Flows & Resources, United Nations University (UNU), International Telecommunication Union (ITU) & International Solid Waste Association (ISWA), Bonn/Geneva/Vienna. [https://collections.unu.edu/eserv/UNU:6341/Global-E-waste\\_Monitor\\_2017\\_-\\_electronic\\_single\\_pages\\_.pdf](https://collections.unu.edu/eserv/UNU:6341/Global-E-waste_Monitor_2017_-_electronic_single_pages_.pdf) (5) Galaxy eSolutions (2018) The Refurbished Phones Market: Outlook Through 2022. Available from: <https://medium.com/@GalaxySolution/the-refurbished-phones-market-outlook-through-2022-f17791aa24a3> (6) CRM (2015) Critical Raw Material (CRM) Project Summary. Available from: <http://www.criticalrawmaterialrecovery.eu/project-summary> (7) Mathieux et al. (2017) Critical Raw Materials and the Circular Economy – Background report. JRC Science-for-policy report, EUR 28832 EN,

Publications Office of the European Union, Luxembourg, ISBN 978-92-79-74282-8 doi:10.2760/378123 JRC108710. [http://publications.jrc.ec.europa.eu/repository/bitstream/JRC108710/jrc108710-pdf-21-12-2017\\_final.pdf](http://publications.jrc.ec.europa.eu/repository/bitstream/JRC108710/jrc108710-pdf-21-12-2017_final.pdf) (8) Forbes (2019) 30 Under 30 Europe – Retail & Ecommerce category <https://www.forbes.com/under30/list/2019/europe/retail-ecommerce/#40c968125a08> (9) EIT Climate-KIC (2018) Digitalisation – unlocking the potential of the circular economy. <https://www.climate-kic.org/in-detail/digitalisation-circular-economy/> (10) ERGO / Munich RE (n.d.) Refurbed – An Amazon for refurbished electronic devices. <https://www.ergo.com/en/Microsites/tackling-climatechange/Start/Climate/Refurbed>