Estimated Costs for our Product

\*\* This is an interesting link to look through when considering costs: <https://www.generalkinematics.com/blog/cost-starting-full-force-recycling-program/>

**Key Info:**

* We must consider **transport** to and from the high-street recyclers – any pick-up programs that could help us do it for less money
* If transporting it ourselves, take into consideration **equipment** and their running costs (i.e. electricity, purchase price, employees wages, etc.). This link estimates around $1,000 per drop-off (**£766,12**)
* Equipment estimated between **£3,830.60-£7,661.20**. Consider electricity-saving equipment.
* **Funding** ideas: government grants, community funders
* Make recycling **convenient for the user**, not the company if you want people to use it

ChatGpt

**Key Info:**

* We have to consider specific **certifications**, hardware sourcing and if our product is in compliance with UKCA marking regulations.
* We must ensure the **payment system** works with regional mobile wallets in the UK/ Europe
* We can consider manufacturing the machines in Eastern Europe – **cost efficient** and compliant with EU labour laws
* We can also explore global supply chains for more affordable options – Asia (India, China, Vietnam, Malaysia, etc.) -> <https://www.usnews.com/news/best-countries/rankings/cheap-manufacturing-costs>
* Consider future scaling options.

**Hardware** Costs Total: €500-€2,500 **(£425-£2,125)** per unit

Casing/ Frame

€100-€500 **(£85-£425)**

* materials listed from most expensive to least.

**Stainless Steel +**highly durable **+**resistant to corrosion, rust **+**easy to clean **+**recyclable

**-**higher cost

**Aluminium +**lightweight (less transportation costs) **+**corrosion-resistant **+**recyclable **+**easy to fabricate

**-**less durable than steel, but still strong enough

**Powder-Coated Steel** **+**cheaper than stainless steel **+**durable **+**rust-resistant with the powder coating **+**easy to clean

**-**slightly less resistant to extreme weather if coating wears off

Conveyor/ Motion System

€200-€1,000 **(£170-£850)**

* Manufacturing in Europe is slightly more expensive

Weighing/ Counting Mechanism

€50-€200 **(£42-£170)**

* ensure components are certified for public use

Processor

€10-€50 **(£8-£42)**

* i.e. Raspberry Pi, Arduino, etc.

Barcode Scanner

€20-€100 **(£17-£85)**

Display/ Touchscreen

€50-€300 **(£42-£255)**

* can be sourced from European suppliers or Chinese manufacturers

Mobile Payment System (Hardware)

€50-€200 **(£42-£170)**

* requires integration with payment solutions like Apple Pay, Google Pay, card readers supporting Visa/ Mastercard

**Software** Costs Total: €30,000-€100,000 **(£25,500-£85,000)** per unit

Back-end Infrastructure

€10,000-€30,000 **(£8,500-£25,500)**

* cloud-based database handling payout history, recycling logs, GDPR-compliant data storage, etc.

User Interface Design

€5,000-€15,000 **(£4,250-£12,750)**

* user-friendly design and multilingual support for scaling

Payment Processing Integration

€10,000-€50,000 **(£8,500-£42,500)**

* integration with European payment systems (SEPA, credit/debit, mobile wallets, etc.)
* complex integration and features that meet GDPR AND PSD2 requirements

Barcode Scanning Software

€5,000-€20,000 **(£4,250-£17,000)**

* European and UK barcodes are standardised (EAN-13), but specific applications for some EU countries or UK may incur additional costs

**Manufacturing and Assembly** Costs Total: €10,500-€51,500 **(£8,770-£43,015)** per unit

Prototype Development

€10,000-€50,000 **(£8,500-£42,500)**

* Europe has higher prototype development costs due to stricter regulations + more expensive labour markets in UK, Germany, France

Mass Production Costs

€500-€1,500 **(£425-£1,275)**

* Cheaper to produce in Eastern Europe OR China at scale

**Licensing/ Certifications** Costs Total: €6,000-€25,000 **(£5,011-£20,881)** per unit

Barcode Scanning Certification

€1,000-€5,000 **(£850-£4,250)**

Recycling Certifications?

€5,000-€20,000 **(£4,250-£17,000)**

* Must comply with WEEE (Waste Electrical and Electronic Equipment Directive) and CE marking

Companies like ***Tomra*** and ***Envipco*** manufacture reverse vending machines and sell them for around €15,000-€50,000 (**£12,528-£41,762**),depending on features and capacity.

*Tomra* manufactures them primarily in Norway, Germany, and Netherlands

*Envipco* manufactures them primarily in the U.S., Germany and Greece