

Circular economy

(supporting document)

About AO

A mature electricals retailer with 20 years' experience selling and delivering electricals; whilst delighting our customers across the UK. AO has invested heavily in creating a circular economy and fine tuning this constantly to ensure it satisfies our customers' ever-changing demands.

The fully integrated process ensures that our assets are maximised: From full vans and trunking vehicles, to maximising the backhaul, with effective routing software to balance the load fill, orders, and capacity across a nationwide network of small logistics out-bases and delivery/ collection fleets.

Incorporated within the routing engine is AO retail customers, Household Waste Recycling Centres, small and large businesses, and non-AO retail customers who want a recycling collection with the confidence of service excellence and trusted recycling by AO.

At the end of the logistics network is AO Recycling, based in Telford, with sites to recycle (and reuse where possible), all large domestic appliances and packaging, 24 hours a day, 7 days a week.

This retailer owned and led process is unique in large appliances in the UK and is only half of the story...

Stretching the Boundaries

At AO we do things differently.

A small group of people in AO Recycling had a dream, born out of frustration in shipping waste plastics to China, and not doing what we felt our customers wanted. All with a financial business case where this could pay back a large investment in an innovative solution.

The plastics recycling plant was created from the vision of refining the plastic outputs from the fridge processing plant; turning them back into single plastics for use directly back into new appliances which would be sold on ao.com, fully closing the loop.



Awards for excellence in recycling.

The plan was to:

1. Build the plant.
2. Prove consistent quality performance and measure both internally with the on-site laboratory we built, and externally with independent, accredited laboratories.
3. Engage with manufacturers who shared our vision and desire to use recycled plastics in new appliances, reducing CO₂ both in shipping and manufacture.
4. Launch the new appliances on ao.com.



Where are we up to?

We've now completed the first 3 steps to our plan, and trialled step 4 with a fridge freezer which was sold in small quantities across spring 2022 with a recycled plastic part, (weighing around 120 grams per fridge). This was not promoted anywhere but was proof of the concept for the whole circular economy.

Running alongside this is the volume business we have grown and expanded across the year with our trusted distribution partner, Ultra-Polymers, and their customer, Volution Group.

The concept is the same as with our vision, except we don't sell their high-quality consumer products on ao.com. With Volution and Ultra-Polymers, we have created different circular loops, again, always focusing on efficiency and sustainability; with the knowledge that focusing on these will also eradicate cost and ultimately drive value for us all, including Volution Group's customers.

AO in Numbers (April 22- Mar 23)

Over **1 million appliances** collected nationwide from households, Household Waste Recycling Centres, small and large businesses. For context, that's almost **60,000 tonnes of old appliances**. Since AO Recycling was operational in Telford, in 6 years of operations, over **6 million appliances** have been recycled or reused.

Of these, we were able to recover, repair, clean and test, **50,000 appliances** for a new life annually. Every one of these sold with a warranty.

10,000 tonnes of fridge plastics (from 1 million fridges), both created from AO's recycling plant and others in the UK, processed, refined and waste/contamination removed and safely disposed of.

Over **2,500 tonnes of packaging**, pulled back from customer's homes as part of the unpack experience, on the same vans, and are recycled to be given a new life in packaging.





The future

The AO circular economy continues to be developed with:

1. New routing software, enabling more efficient collection runs and growth of 3.5T vans rather than large vans.
2. Electronic, hazardous waste consignment note functionality built into each collection drivers' handheld terminals. For some regions this has been rolled out in 2022, but there are regions where we will drive further tech changes to enable its deployment. Moving from paper to technology, when it's intuitive, accurate and provides greater audit trails, whilst simultaneously generating brilliant data to enhance this leg of the cycle. Must be a winner!
3. We're developing the relationship with Volusion Group to try to leverage the AO circular economy further. We're already trialing:
 - a. Accepting returned /used ventilation for re-processing with the outputs ready for a new appliance.
 - b. Purge material from extrusion and mould shop losses for granulation, and re-use in new appliances.
 - c. Industrial cut-offs / waste.

In addition to this:

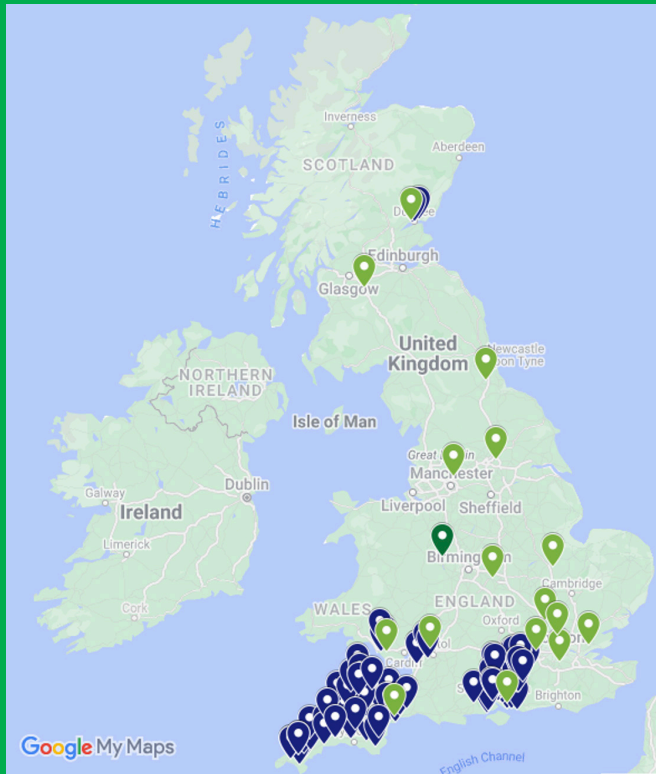
We are laser focused on delivering our vision, but this will take time; and to date, the small team at AO Recycling have had to overcome the challenges of technical uncertainties of an innovative plastics recycling plant.

We've rolled out new tablets in the reuse production area, enabling fantastic data capture and KPI measures; and are now looking to develop fault-based diagnostics to provide the expected likely fault on any appliance going through reuse triage. This will help drive up reuse rates and make us more efficient, to boot!

In the forthcoming year, we are targeting a 50% increase in the volume of plastics recycled. This requires new shifts, process improvements and a huge project plan, with a delivery team of 5-6 people in AO Recycling.

Our circular service in action





Our Nationwide Coverage, running 362 days every year:

Household collections from Lands End to John O'Groats.

Household Waste Recycling Centre collections from Exeter to Dundee.



AO Locations



HWRC Locations

Key participants in the AO circular economy

AO Logistics – A wholly owned subsidiary of AO, with a nationwide fleet of vans and trucks, utilising c.20 small out-bases. 99.5% service levels and +100,000 Trustpilot 5-star ratings.

Ultra -Polymers – A UK based plastics distribution, owned by Ravago (global plastics distribution), who manage supply chain, extrusion partners and sales channels; along with plastics expertise to ensure the customers' requirements for a plastic application, match the specification of the plastic provided.

Volution Group – Global market leaders in residential and commercial ventilation solutions, and in the UK, mould, manufacture and sell under numerous brands including Manrose and Vent-Axia.

It's all about trust

AO has WEEELABEX accreditations, externally audited to the Cenelec European Standards:

1. Fridge recycling.
2. Ammonia degassing (removing refrigerants from small fridges often found in caravans, boats, and mini bars).
3. Reuse production.
4. Plastics Recycling.

AO has also been awarded the ROSPA Gold Award for 5 consecutive years - the highest standard for safety of our people, along with a raft of ISO accreditations.

