

### Who are we?

Axion Consulting works with a wide range of clients within the recycling and process industries to develop new methods for recovering and recycling waste materials. The consultancy team works with clients to develop novel processes and trial innovative collection methods for a variety of industrial and commercial markets.

The consulting team is comprised of experienced chemical engineers, polymer specialists, field consultants, recycling project managers, project administrators, researchers, analysts and marketing and communication specialists.

Our clients like our ability to translate research results into commercially viable projects and our expertise in managing complex practical trials on time and on budget.

### Key areas of expertise

Axion Consulting's experience and expertise lies in six key areas:

#### 1. Plastics recycling

Axion Consulting has expertise in plastics recycling with excellent experience of recycling a wide range of polymer types, including polypropylene, polystyrene, polyvinyl chloride, polyethylene terephthalate, high-density polyethylene and mixed plastics. We have deep technical knowledge of recycling post-consumer and post-industrial plastics, effective collection systems, techniques to separate and clean plastics and the manufacture of recycled plastics, both food grade and technical grade. We also have a strong commercial appreciation of the recycled plastics supply chain, including identifying and evaluating end uses and markets, export of recovered plastics and the financial aspects of reprocessing plastics.

#### 2. Collections

We have wide-ranging experience of developing and managing innovative collection schemes. The focus of our work is often hard to reach audiences or difficult to recycle waste streams. We have designed, developed and managed numerous collection and recycling trials for a broad range of clients. Many of the trials we have delivered have continued after the initial test phase and now operate as nationwide commercial collection schemes, including Recofloor, the vinyl take-back scheme.

We have particular expertise and skills in managing 'industry led' initiatives, that involve working with a sector to find innovative and effective solutions to collect and recycle the waste they generate. This includes extensive knowledge of closed-loop recycling, collection logistics, including reverse haulage, collection containers, minimisation of contamination and participant education and awareness raising. We have proven success in driving up recycling rates for targeted waste streams.

#### 3. Engineering

Axion Consulting has a team of highly skilled and experienced engineers who specialise in designing and commissioning processing plants and plant modifications for companies in the resource recovery sector. We have



experience of building plants that are innovative but also reliable and rugged. This area of work involves process development, plant layouts, equipment selection and procurement, project management, process design, build and installation, developing and reviewing operating procedures, maintenance systems and quality management procedures.

#### 4. Carbon footprinting

Registered by the Carbon Trust as qualified operators of its Footprint Expert carbon footprint calculation software, we offer three levels of service:

- rapid hotspot analysis where a calculation of carbon emissions for a product or process is carried out for an organisation's internal purposes;
- calculation of the carbon emissions of a product or process in line with PAS 2050 standards but without external auditing; and
- working with a client to achieve an externally audited certified Carbon Footprint label using Footprint Expert calculation software.



We have direct experience of carbon footprinting through our Axion Polymers manufacturing division, which has the first polymer manufactured in the UK to achieve the Carbon Trust carbon footprint label.

## 5. Business planning

Axion Consulting is able to provide business planning and support to businesses in the resource recovery sector. We can develop investor-ready business plans to assist a business with growth planning or to attract external investment or funding. Market investigations and comprehensive financial assessments can be carried out to consider the commercial viability of a process or facility, evaluating both capital and operational expenditure.

## 6. Processing trials and optimisation

We have the ability to manage processing trials and optimise processes within the resource recovery sector, with plastics recycling, metal recycling and biofuels being just some of the sectors we work with. We are able to manage and deliver all aspects of processing trials, from developing a detailed trial plan and risk assessment, sourcing trial material, running and observing trials, collecting and analysing samples and reporting. We have extensive experience of conducting process engineering trials of many different separators and size reduction technologies.

## Why use Axion Consulting

Axion Consulting supplies the expertise, knowledge and necessary skills to implement projects in the process industries, which are both environmentally sound and economically viable.

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## Examples of Clients and Projects

The company works with a wide range of clients in diverse commercial sectors such as Waste Electrical and Electronic Equipment (WEEE) plastics recycling, vehicle recycling, bio-fuel and scientific research. Examples of our clients and projects include:

- **WRAP** - delivered extensive amount of work for WRAP including series of demonstration trials of a range of separation techniques for WEEE plastic mixtures and demonstration trials to develop a commercial recycling process for flat panel display televisions.
- **Carpet Recycling UK and Envirolink Northwest** - practical trials of recycling of post consumer polypropylene carpet.
- **Defra** - major research project to develop and test bulk separation methods for WEEE polymers.
- **WRAP and private clients** - development of advanced processing techniques to produce food grade polymer from post consumer high density polyethylene and polypropylene.
- **Coca Cola Great Britain** - design and implementation of an award winning major promotional campaign, 'Talent from Trash', aiming to encourage increased recycling activity through promotional activities with Football League club supporters and their families.
- **Recovinyl** - management of the PVC industry's UK recycling project - market-based mechanism working with existing recyclers to encourage recovery of post-use PVC waste.
- **Recofloor** - testing and now ongoing management and further development of a UK-wide collection and recycling scheme for post installation and end of life vinyl flooring with 300 collection points on behalf of leading UK flooring manufacturers Altro and Polyflor.
- **Greenery International Ltd** - market and technology assessments followed by business plan development for biodiesel manufacture from waste and virgin vegetable oils. This led to the construction of a 200,000 te/yr biodiesel plant at Immingham. Axion also carried out the business planning and investment due diligence for Greenery's acquisition of the Mayflower Fuels terminal in Plymouth and for Greenery's investment in Scarab Energy, a major joint venture to develop distributed waste to liquid fuels capacity in the UK.
- **North East of England Process Industry Cluster (NEPIC)** - development of a business plan for a large scale oilseed crushing plant in the North East of England.

Drawing on extensive experience, Axion is a reputable company that offers a practical, efficient and friendly service. We take an open and honest approach, working collaboratively with our clients to find flexible, innovative and novel ways to solve challenges within the resource recovery sector.

