

Case Study:

Identification of near infrared (NIR) optical sorting good practice in the UK and mainland Europe

Client:

WRAP (Waste & Resources Action Programme)

Challenge:

- Previous studies have shown that standards of quality and yield achieved by NIR optical sorting facilities, such as Materials Recovery Facilities (MRFs), vary enormously across Europe
- To study and share examples of good practice in order to improve recovery rates and quality of materials from NIR sorting facilities

Axion Solution:

- Identified suitable operating sites that use NIR technology for detailed study
- Collected and analysed production data held by site
- Conducted performance testing trials at six sites across Europe
- Assessed key factors that contributed to success of sites achieving good NIR sorting performance
- Determined what constitutes good practice and wrote guidance documents for existing and potential recyclers of household plastic packaging waste



Conclusions:

- Careful feed preparation to present a monolayer to the sensors is key to NIR sorter performance
- Do not just accept manufacturer's default settings. Optimise them on real feed material
- Measure feed and output product compositions regularly to quantify sorter separation efficiency

Near Infrared (NIR) good practice guidance available from WRAP website:
http://www.wrap.org.uk/recycling_industry/publications/near_infrared_nir_1.html

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