Plastic Pellets

Statement of Requirements for an Industry Register

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Date: 20 January 2021

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This report was prepared by P.J Malley Bsc. PhD. and was commissioned by Zero Waste Scotland on behalf of the Scottish Government's Pellet Loss Steering Group. The author has 39 years of experience in the Chemical Industry and has a detailed understanding of the plastic supply chain having held a number of senior logistics roles related to the handling and transport of plastic pellets for large International companies. The author has extensive contacts within the industry and was an industry representative on the Plastic Pellet Steering Group.

Zero Waste Scotland

Zero Waste Scotland exists to lead Scotland to use products and resources responsibly, focusing on where we can have the greatest impact on climate change. Using evidence and insight, our goal is to inform policy, and motivate individuals and businesses to embrace the environmental, economic, and social benefits of a circular economy. We are a not-for-profit environmental organisation, funded by the Scottish Government and European Regional Development Fund

Plastic pellets Steering Group

In 2018, the Scottish Government established a steering group with the purpose of exploring how best to maximise pellet loss prevention. The steering group comprises of representatives from businesses, environmental organisations, regulators, standards organisations, officials and industry bodies.

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Executive Summary

As part of wider supply chain and stakeholder work to reduce plastic pellet pollution, it is necessary to develop a certification scheme which provides confidence that companies with custody of pellets are handling them responsibly to prevent their loss. A standard is being created by the British Standards Institution (BSI) to identify the handling requirements. A public register detailing the companies that meet the standard is proposed to publicly demonstrate compliance and enable the procurement functions of businesses to encourage or insist that their suppliers are compliant and listed on the register. This report has been compiled following discussion with a number of industry organisations throughout the supply chain, regulators, NGOs and standards organisations. It defines: i) the essential requirements to establish such a register and subsequently develop it fully, and ii) the requirements that are desirable and need further development and discussion before being adopted.

1 Introduction

Plastic pellets (pellets, powders and flakes) have been identified as a significant source of plastic pollution both on beaches and in the oceans leading to industry and other stakeholders proposing ways to tackle this issue. Previously a cross stakeholder study concluded a supply chain approach is the preferred option to reduce pellet loss. This can be achieved with the development of a certification scheme which would enable plastic supply chains to demonstrate that they are handling pellets responsibly through a chain of custody approach. The proposed system builds on the principles and procedures of Operation Clean Sweep (OCS), implementing an auditable Publicly Available Specification (PAS) which is being developed by the BSI that details pellet handling requirements to be used by companies. Other standards are also in development across Europe, and this paper makes the assumption that some or all would be equivalent to the PAS. This PAS is anticipated to apply to companies that have ownership of the pellets they handle or have physical custody of them and handle them on another company's behalf; it is therefore relevant to logistics providers. The PAS is due to be published in July 2021.

All organisations, regardless of size, will be able to participate in this approach. While implementation of and auditing against the PAS will be voluntary, it is anticipated that the procurement strategies of companies throughout the supply chain, including brands and retailers with their own customer expectations, will require their suppliers to be certified against the PAS, thereby driving uptake throughout the supply chain. Those organisations audited as meeting the requirements of the PAS will be able to be listed on a publicly available on-line database, 'The Register'.

To assist in the design, establishment and development of the Register this report summarises the discussions regarding the Register design that have been carried out with industry organisations at all levels of the supply chain, interested parties such as NGOs, a regulator and standards organisations. This report outlines responses and recommends the requirements that the majority of organisations consider essential for a successful Register along with those that are desirable and could be implemented at a later date as they require significant further discussion before inclusion.

2 Scope of the consultation

The consultation was designed to include companies that handle pellets or have custody of pellets in the supply chain along with other interested parties in order to obtain a wide range of views. **Table 1** provides a summary of the types of organisations contacted, split by industry sector, and the number of discussions carried out. The scope was limited to the UK although it is expected that the Register will be International, covering at least Europe. Although only a small fraction of the companies handling pellets in the UK was able to be consulted, all areas of the supply chain are represented in this report along with the trade associations which represent a wide range of members' views.

The fundamental basis of the Register is that a company will only be approved membership if it passes an independent audit against a standard approved by the Register, for example the PAS. A company with multiple sites will need to be independently audited and separately represented on the Register for each site. Based on this premise, the consultation obtained views on what data the Register should contain, what should be publicly available, how the Register should be managed and the criteria necessary for either subscribing to the Register or being removed from the Register.

The results identified the requirements that are essential both to establish and develop the Register, those that are desirable and those that need further discussion. The essential requirements are those that are either needed to initially set up the database in phase 1 or need further discussion before being implemented in phase 2. The desirable requirements are those that can be considered at a later date as they require significant discussion.

Table 1 Summary of discussions carried out

Organisation Type/ Industry Sector	No contacted	No of Discussions
Polymer producer	5	5
Haulier	5	5
Port	2	1
Shipping company	2	1
Terminal/ Warehousing	2	1
Converter	7	5
Compounder	3	3
Trade Moulder	3	1
Scientific	1	1
Recycler	2	2
Retailer	2	1
Regulator	1	1
NGOs	2	2
Standards	2	3
Total	**39**	**32**

3 Essential requirements – phase 1

The essential requirements for the database are identified below. A summary is provided in Appendix 1 – summary of requirements.

3.1 Database

The database must be of a sufficient size to be able to handle the level of data required. It is anticipated that the Register will be international and ultimately will, after a few years of operation, contain tens of thousands of company sites. The Register will hold information that is for the Register Manager only and also data that will be publicly available. Appropriate measures will need to be inplace to ensure data security and to ensure GDPR compliance.

It is anticipated that after initial application to a site by a company, their details would be updated on an annual basis, with several searches for information in the interim. With the potential for both the number of companies on the database and the number of searches to significantly increase over time the database will need to be created with the flexibility for additional capacity to be added as requirements demand.

3.2 Developing and managing the Register

Discussions indicated that an Independent organisation was considered the most appropriate organisation to develop and manage the Register. However, an alternative option was put forward by many during the consultation. In this model the Register would be owned by an Industry Association, such as Plastics Europe or British Plastics Federation, who act as the Register Manager. They would be supported by a Governance Board to provide scrutiny and have oversight of the design and management of the Register. This governance board would be an independent multi-stakeholder group of experts from industry, NGOs, policy makers and certification bodies.

Under this second model the Register Manager would be responsible for the day-to-day running of the register, such as monitoring the performance, writing guidance overseeing auditor training and managing the registration of certified companies. The Register Manager would also report to and provide the technical expertise to the Governance Board. The Governance Board would take decisions on critical aspects of the Register. This would consist of, among other things, reviewing effectiveness of the Register and the approval criteria for new standards, training, certification bodies and certification body accreditation. A key aspect of the Governance Board's work with the Register Manager would be to develop phase two of the Register. This will enable the procurement performance of companies to be demonstrated, drive compliance along supply chains and so achieve full certification of entire supply chains.

3.3 Data included on the Register

A precursor to being included on the Register is that a company has been independently audited and passed an appropriate standard approved by the Register e.g. BSI PAS. All organisations consulted accepted this. No organisations objected to the Register being open to the public but it is recommended that there are some restrictions to the data made available. For example, audit reports may contain commercially sensitive information for some companies.

To run the Register a significant amount of data is required. This can be split between what is needed by the manager to develop the Register and what should be publicly available. A number of fields in the publicly available data should be searchable to enable companies using the register to easily find the information they are looking for. The types of data are outlined in **Table 2**.

Table 2 Data requirements

Type of Data	Register Manager	Publicly Available	Publicly Searchable
Parent company	✓	✓	✓
Company/ business	✓	✓	✓
Site	✓	✓	✓
Country	✓	✓	✓
Size tes (based on tonnage bands)[1]	✓	✓	✗
Type of company	✓	✓	✓
Sector see Table 1	✓	✓	✓
Company contact details	✓	Generic details or website	✗
Standard audited against	✓	✓	✗
Last audit date	✓	✗	✗
Audit result	✓	✓	✗
Certificate	✓	✓	✗
Date of expiry of certificate	✓	✓	✓
Certification body/ auditor	✓	✓	✓
Alphabetically	✓	✓	✓
Combinations of the above	✓	✓	✓

The audit report is deemed confidential between the company audited and the auditor. It may contain sensitive commercial information and so was considered by many of the companies as not appropriate to be shared. Use of an accredited auditor and passing the audit was deemed to be sufficient confirmation that the companies are meeting the expected requirements. This should be coupled with

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[1] The size of a site, following discussion with the industry, can be split into the following bands based on tonnage (tes) of pellets handled and avoids the need for absolute numbers.

- 0-100 tes
- 100-1000 tes
- 1000-10000 tes
- 10000-100000 tes
- 100000-250000 tes
- >250000tes

comprehensive auditor training (see section 3.6) and kept under review by the Governance Board to ensure satisfaction that auditors are able to apply standards in a consistent and stringent way.

The Register should make the requirements of each Standard's audit clear and available to the public.

Any private data such as individual contact details provided by companies to the Register should only be kept for as long as that contact is valid. If the contact details are changed then the previous details should be deleted in order to meet GDPR requirements.

Data, including that related to whether a company passes or fails an audit, should be kept for a minimum of 5 years. This will enable the Register Manager to determine whether a company is regularly failing and re-applying to join the Register. The Register Manager should keep records of companies that have failed an audit but this shouldn't be made public. Companies that have failed an audit should be removed from the public facing Register.

3.4 Registry applications and updates

The process for applying to join the Register should be simple to reduce barriers to uptake. An on-line portal in which a company can apply, and the necessary information be uploaded, was considered the most appropriate. The company should provide their own details through the online portal. To limit the need for an additional verification step by the Register Manager, the auditor from an accredited certification body must provide the results of the audit and upload a copy of the certificate. Both the company and certification body applying must accept the privacy statement and Terms and Conditions for joining the register.

Each company site and each auditor from an accredited certification body must have their own unique identifier which is password protected. To maintain data security the Register must have a security protocol so that only the company representative can input their company information and only the specific auditor that carried out the audit from the certification body can update the audit information. In this way there should be no need for any extra verification of the audit results by the Register Manager. Application to join the register should therefore be almost instantaneous or certainly no later than an overnight refresh of the Register.

If the company details change then it should be optional as to whether this is updated by the company contact or the auditor. The audit result must only be updated by the relevant auditor. Updates on the register should be instantaneous.

As the auditor is responsible for uploading the audit results it is important that they understand the need to update the audit results immediately to ensure the Register is fully up to date. It should be the responsibility of the company to stipulate to the auditor that timely updates to the register are required following an audit. This should be reiterated as part of any auditor training.

3.5 Auditing

A successful audit by an independent accredited auditor is the key to being allowed to join the Register. Many of the companies applying will already be audited by accredited certification bodies. To minimise cost and resources, the audit can be an extension of existing regular audits. Many companies are already audited to ISO 9001 or 14001 and require to be re-certified every 3 years, but most have an annual review. Most companies anticipated that either an annual audit or review was appropriate. This annual audit result will require to be uploaded to the Register by the accredited certification body.

The Register will display a list of companies meeting the standard, and also list certification bodies able to carry out audits against the relevant standards. This information should be publicly available to enable companies to identify an accredited certification body for future use.

3.5.1 Auditors

An accredited certification body can be recognised by the Register at the request of the site being audited, or at their own request. Relevant information should be provided and a decision taken if inclusion is appropriate. The agreed governance approval structure (see section 3.2) should state where responsibility for approval of individual certification bodies lies.

3.5.2 Audit re-certification delays

A scheduled audit may be delayed due to issues with the auditing company or the company that is being audited. In both cases a replacement audit should be arranged within 3 months, therefore a delay of 3 months maximum should be allowed before a company is removed from the Register. Exceptional circumstances such as the current Coronavirus pandemic warrants special consideration and the requirements for auditing modified accordingly.

In the event that a company isn't immediately recertified after the audit, the auditor will specify a short period of time for the company to resolve any identified issues. This time period should be appropriate depending on the scale and the risk of the issue identified. This time period cannot exceed 3 months. In such a circumstance there should be provision on the Register for the auditor to highlight this but the company should not be removed. If the company doesn't meet the dates for resolution of the issue then the company should then be removed.

In both the above cases it is appropriate that the Register flags the company as being overdue for an audit and sends a notification/alert to the company and auditor.

3.6 Auditor selection and training

The certification body used to audit a company must be suitable and well trained in the standard they are auditing. A training package based on the standard can either be developed by the Register Manager and Governance Board, who would provide this to the certification body; or the certification body can take the standard and develop their own training requirements. Both methods are currently used in the Industry. The process for developing training should be defined by the Governance Board following advice by the Register Manager.

In either case the training package for each standard acknowledged by the Register and the subsequent auditor training must ensure that the standards are audited in a stringent and consistent way. This is to ensure that an audit pass reflects a consistent performance across all sites audited independent of the approved standard used or the auditor employed. It is anticipated that the Register Manager and Governance Board will be responsible for reviewing and approving audit training packages and the development of training packages if required.

3.7 Communication

3.7.1 Acceptance on the Register

Acknowledgement by the Register that a company has either been accepted or an update has occurred was considered important. This could be as simple as an automatic e-mail acknowledgement. However, if a company is to be removed from the public facing Register then it was considered vital that they be informed and the reason for the removal provided. In normal

circumstances this should not come as a surprise to the company as they should be aware of either a failed audit or an audit that hasn't been carried out at an appropriate time.

3.7.2 Removal from public Register

Companies should be removed from the public register:

- if they are not audited in time with a pass result provided according to the timescales allowed,
- if they are not re-certified at an audit and then fail to meet the requirements to obtain re-certification in the timescale required,
- if they ask to have themselves removed from the Register.

Obtaining a valid re-certification should enable them to be re-instated on the Public Register. The Register Manager should retain the records (outlined in section 3.3) of the companies. Communicating with companies

3.7.3 Communicating with companies

The Register Manager may want to communicate with all or a subset of companies on the Register, for example to alert the companies of any significant downtime due to maintenance requirements, changes in audit protocols or updates or enhancements to the Register.

3.7.4 Representation and use of Register by companies

Representing the companies on the Register by their name and logo is considered sufficient. Most companies would like to communicate the inclusion on the Register with their customers and suppliers. Providing a link to the Register website was considered sufficient.

3.7.5 Language

English was considered the essential language for the Register and other languages may be considered depending on the international uptake.

4 Essential requirements – phase 2

A number of other requirements have been identified which should be incorporated in the near future. While these are not essential for individual companies to achieve recognition on the register, they are essential to drive uptake and demonstrate compliant supply chains. These should be developed with the overview of the Governance Board to ensure timely and effective implementation. Required capacity for these features should be considered at phase 1.

The essential requirements of phase 2 are outlined in the following sections.

4.1 Demonstrating retailers commitment

Provide an area for retailers to outline and demonstrate compliance of their supply chains to the pellet handling standards. This is important as the retailers are a key driver in pushing compliance throughout the supply chain.

4.2 Recognising procurement activities

Provide a mechanism on the Register to recognise the procurement activities of the companies, for example if the company is only handling pellets from certified companies. To achieve this a set of rules will need to be developed describing how the site's procurement activity and the level of compliance by their suppliers is monitored. The rules and how this activity is checked should be

determined by the Governance Board in accordance with its agreed roles and responsibilities (see section 3.2). This feature would reduce reliance on awareness-raising to encourage uptake.

4.3 Reporting of loss estimates

Reporting of loss estimates will become a requirement. OCS blue in the US has already developed additional commitments for its members. Of particular interest is the requirement "to report annually the number and volume of incidents of any unrecovered release of plastic pellets, flakes, powders or granules, within the physical custody of a member company, from containment to ground or water outside member-operated facilities and estimated to be greater than 0.5 litres or 0.5 kilograms per incident". How and when this is incorporated into the Register will need to be determined by the Governance Board in accordance with its agreed roles and responsibilities (see section 3.2).

5 Desirable requirements

A number of additional options have been put forward and should be considered for development in the future. They require further discussion and development which should be overseen by the Governance Board. The desirable requirements are:

a Employ a grading system at the audit stage that companies can aspire to so that they will strive to be at the top level. This may not be possible if there are multiple equivalent standards that are recognised by the Register as the comparison between companies may then not be relevant. The Register's governance body should explore the potential to develop this further once the register is established.

b Providing an audit report to the Register was considered. Nearly all organisations rejected the idea of providing the full audit report although some did accept that a summary report of the audit may be possible. However, providing a publicly available summary of the standard within the Register detailing the requirements needed to pass an audit and so comply with the approved standards was considered sufficient.

6 Options raised for further discussion

Several additional comments were raised in the discussions that require further consideration these include the following:

a Enabling a complete supply chain to be tracked on the Register was proposed. This would need additional verification to the audit required for the standard, and would require a mechanism for companies to be linked to each other within the Register. This would be very complex and clear direction would be required. Utilising the power of the retailers requesting confirmation through their supply chains is more appropriate.

b Requiring companies to also list their activities, the polymers handled, services carried out etc was suggested as a way to make it a useful procurement tool. Although this would be nice to have it would need careful consideration of how this would be used, designed and maintained. If its sole function is to enable companies to use it as a procurement function and identify potential suppliers this can be achieved more readily by other means. The Registry will already contain the company type and size.

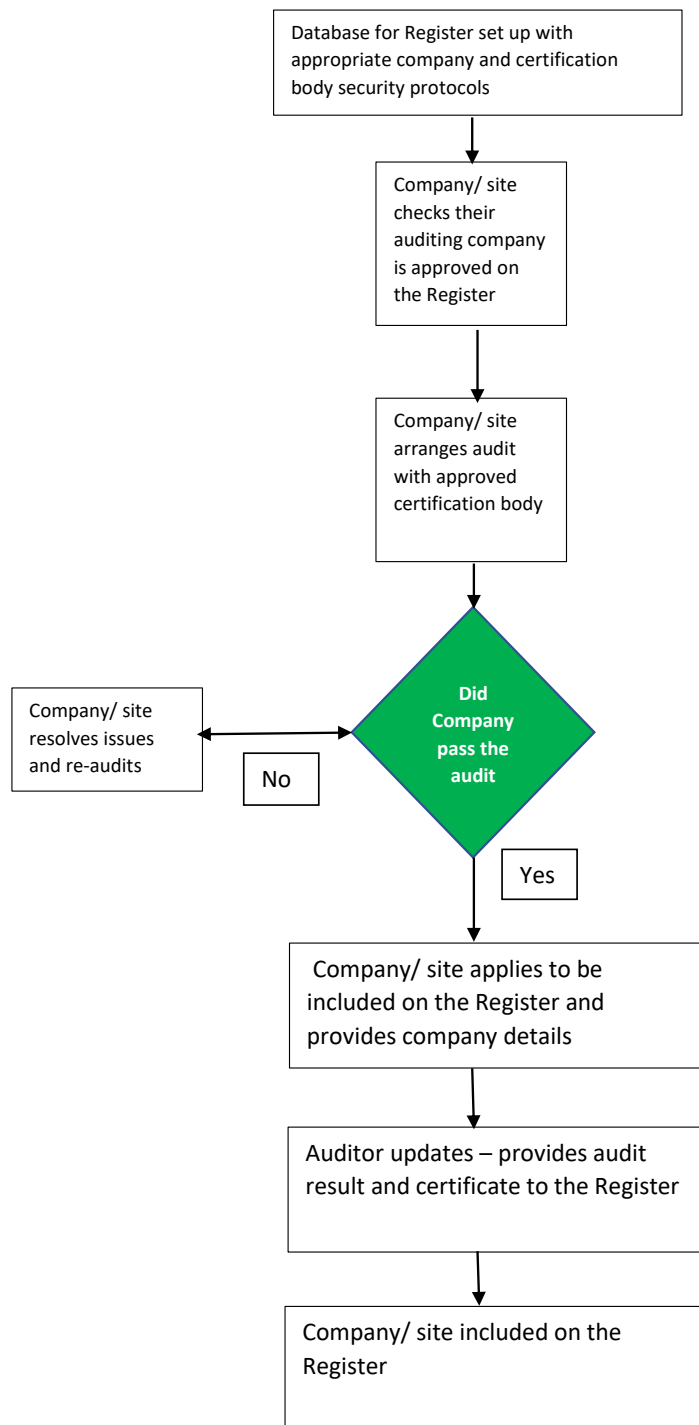# 7 Lessons from other areas

7.1 Registers

There are Registers employed to carry out similar activities, i.e. the listing of companies independently audited by an accredited certification body and shown to meet a particular standard. The most

relevant of these is that employed by the British Retail Consortium (BRC). Their BRCGS Directory is aimed at harmonising food standards. This Directory, which is publicly available, hosts information from over 25,000 companies in various different sectors of the food industry. Audits are carried out annually by a list of accredited certification bodies and the Directory makes public, for those companies passing the audit, a similar set of data as outlined earlier in this document.

8 Use of the Register

Outlined below are the steps required for use of the Register

```
┌─────────────────────────────────┐
│ Database for Register set up with│
│ appropriate company and          │
│ certification body security      │
│ protocols                        │
└─────────────────────────────────┘
                │
                ▼
        ┌───────────────────┐
        │ Company/ site      │
        │ checks their       │
        │ auditing company   │
        │ is approved on     │
        │ the Register       │
        └───────────────────┘
                │
                ▼
        ┌───────────────────┐
        │ Company/ site      │
        │ arranges audit     │
        │ with approved      │
        │ certification body │
        └───────────────────┘
                │
                ▼
        ◆ Did Company pass the audit ◆
```

Company/ site resolves issues and re-audits   ◄── No

Yes

Company/ site applies to be included on the Register and provides company details

Auditor updates – provides audit result and certificate to the Register

Company/ site included on the Register

Appendix 1 – summary of requirements

Summary of essential requirements for the Register – phase 1

	Topic	Requirement
1	Database	Large database sufficient to handle tens of thousands of inputs
2	Data	Database must be able to handle all the data as outlined in Table 2
3	Inclusion	Company/ Sites must have met the standard approved by the Register by passing an independent audit by an accredited certification body
4	Application	The Register must have an online portal to enable companies to apply and recognise that if the correct information is uploaded the company is automatically included on the Register
5	Inputs	Company/ sites are able to update company information; certification body auditor able to input audit results and, if authorised by the company, company details also
6	Security	Link company/ site with relevant certification body and provide unique passwords to both company and certification body to input information
7	Certificates	Database must have the facility to upload documents
8	Certification body approval	Online portal is to have a facility for certification bodies to apply for approval to be able to audit companies to the appropriate standards
9	Auditor training	A system for auditor training/ protocols approved by the Register
10	Auditors	Database to maintain a register of approved auditors
11	Delays	Database needs to be able to recognise audits haven't been completed on time and flag this on the public database.
12	Removal	Database needs to recognise when companies are overdue and passed the time of removal from public facing Register and remove from public Register
13	Communication	Register needs a facility to inform companies/ sites that they have been approved, information updated or that they are being removed from the Register and information about the Register e.g. maintenance updates or changes
14	Search engine	Database requires a search engine which is public facing allowing the public to search data based on Table 2 search criteria

15	Register presentation	Register has a visually appealing clear presentation of the search results
16	Company presentation	Companies represented using their appropriate names and if feasible company logos
17	Storage	Database required to store data for a period of time (minimum 5 years) after company removed from public Register
18	Register manager	Register Manager who is responsible for the day to day running of the Register and to provide technical expertise
19	Governance Board	Multi-stakeholder body that in conjunction with the Register manager defines the Governance structure for the Register
20	Governance btructure	Suitable governance structure with clear roles and responsibilities for the Register Manager and Governance Board

Summary of essential requirements of the Register – phase 2

	Topic	Requirement
1	Retailers	Provide an area within the Register where retailers can demonstrate the compliance of their supply chains
2	Procurement activity	Monitor procurement activities of companies to demonstrate and drive compliance of their supply chains
3	Losses	Incorporate annual estimated loss reporting into the Register

Desirable Requirements

	Topic	Requirements
1	Graded pass	To have a system that grades the audit result
2	Audit report	Consider whether a summary audit report is necessary for the Register

Glossary

Certification Body – is an organisation accredited by a recognized accrediting body for its competence to audit and issue certification confirming that an organization meets the requirements of a standard

Compounder – is accompany that takes plastic pellets, powder or flakes and mixes these with other polymers or additives to produce a new product

Converter – is a company that takes plastic pellets, powder of flakes and transforms these into a product that can be used

Haulier – is a logistics company that transports by road plastic pellets, powder or flake in bulk form using road tankers or in packaged form on pallets.

Independent audit – is an audit carried out by an approved third party external to the company they are auditing

NGO – Non-governmental organisations which have vested interests in subjects that benefit society

PAS – A Publicly Available Specification is an internationally recognised standard developed by BSI to fast-track standardisation documentation.

Plastic flakes – are plastic pieces usually derived from larger sheets of plastic cut down to be reused

Plastic pellets – are plastic granules

Plastic powder – is fine powder either produced through the polymer production process or through granulation of polymer pellets or plastic articles

Polymer producer – is a company that produces plastic powder or pellets through reaction of chemicals in a chemical reactor

Port – the link between the land and sea where the plastic pellets are loaded and unloaded onto ships

Scientific company – is a small company which carries out R&D and uses small samples of plastic and isn't directly in the supply chain between Polymer producer and retailer.

Shipping company – is a transport provider that can convey both bulk and packaged plastic in sea crates on a ship

Site (polymer user) - is defined by the boundary of the premises the company occupies usually defined by an external fence.

Site (haulier) – is defined for audit purposes as the depot where the trucks return to when their work is complete and whilst in transit is the boundary of the truck with the environment. Spot checks should be carried out on the trucks.

Site (shipping company) – is defined for audit purposes as the office which controls and manages the company's ships and whilst in transit is the boundary of the ship with the external environment. Spot checks should be carried out on individual ships.

Standards organisation – is a company that prepares and writes standards

Recycler – is a company that takes waste plastic and recycles this for use in alternative applications

Regulator – is an organisation that monitors and audits companies to ensure they meet their legal requirements

Retailer – is a company at the end of the plastic supply chain that uses and sells the articles produced to the public

Terminal – is a supporting activity that stores plastic pellets and loads trucks for onward transport

Trade Association – is an organisation that represents the interests of the plastic industry

Trade moulder – is a company that produces articles to order for 3rd party customers by using various moulding techniques

Warehouse – is an area where plastic pellets are stored awaiting distribution to customers